

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

NOVEMBER 1, 1941

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Abies Nordmanniana

Credits and Collections

Changes of State Regulations in 1941

Scientific Approach to Plant Breeding

Editorial

THE WATERS ARE RISING.

The man who is caught in a flooded cellar is doomed when the rising water reaches the ceiling.

That is the picture of the nurseryman who realizes that costs are creeping up on him, but does nothing about raising the level of prices he has been quoting in his catalogue in prior seasons. To hope that the waters will recede is vain. To wait for a rescue party is hopeless.

Mounting costs demand thought. Consider the big increase in labor cost from the points of view of both wages and quality of work. All shipping materials are much higher and hard to get—burlap, paper, twine, corrugated board, lumber.

Another thing to think about, which few have before, is the amount of soil shipped out of a nursery on balled and burlap material—and your best soil, too. What does it cost you to replace that?

One may recall the congressional debate after the Civil war about the resumption of specie payments and retirement of the greenbacks, which brought forth the famous dictum, "The way to resume is to resume!"

BUILDING WILL CONTINUE.

Last month the daily newspapers carried sensational front-page headlines to the effect that the federal government would cut down on all building except that necessary in the defense program. The basis for the headlines was a statement of policy by the supply priorities and allocations board at Washington regarding its exercise of control over all construction, public and private. Nurserymen as well as home builders were alarmed at a possible drastic curtailment of business.

The reaction was so immediate and widespread that, October 20, Donald M. Nelson, director of the board, said that the order was not a blanket stop order and that structures which do not involve the use of such critical materials as steel, copper and brass could be erected as

freely as a year ago. Such basic building materials as lumber, brick, stone, concrete and the various clay products are not particularly scarce, are not under priority control and hence may be obtained freely for any building job whatever, he said.

The amount of metal used in the type of homes being currently built is small, chiefly fittings, of which no scarcity has developed, except in temporary local cases. Subdividers in some cases have acquired a stock of materials sufficient for their needs. Because of the building boom, jobbers and dealers have large supplies. The American Builder magazine "saw nothing in the statement to change the outlook held by the building industry prior to the issuance of the order."

The board actually stated that priority assistance would be considered in construction essential for the health and safety of the civilian population. Hence it seems likely that all those persons who have the money may build homes—and have them planted.

TO THE ONE-MAN FIRM.

Rarely does the individual who starts a small landscape business or nursery begin with a set of books. In these days when much business is done on a cash basis, he may not even maintain a bank account, which would show to some extent his receipts and expenses. Even if his business later grows to such size that some sort of bookkeeping is required, there are no records of those early years.

Then one fine day in may walk a revenue agent of the federal government to inquire about payment of social security or income taxes, or an officer checking on local licenses or taxes.

It may be obvious to the individual in this situation that he owes no taxes, either state or federal, because he has made only a bare living for himself during the few years he had been establishing the business. But it may not be so obvious to the government agent, and he may ask to see some records. While the individual was making a bare living, how much

The Mirror of the Trade

money did he turn back into the business, in buying tools and equipment, in purchasing stock that is now filling up his small sales ground? Didn't the individual employ an occasional helper on construction work or a planting job, so that a federal social security tax is due, even if there is no liability for state unemployment compensation tax? If that proves to be the case, and the one per cent tax was not deducted from wages of employees whose present whereabouts are unknown, the individual may have to pay that as well as the employer's one per cent.

The tax liability may be small, even with interest added. But the time that must be spent to dig up some sort of figures and then to go over them with, perhaps, not one revenue agent, but several representing different departments, will be more than a nuisance, and downright expensive if it has to be done at a time when a short autumn or spring season demands working every waking hour.

The number of cases of this kind which have occurred recently prompts this advice to the one-man firm. Keep some sort of record of the money you receive and where it goes, even if it is only in a pocket notebook. And don't take just anybody's word that you are not liable for such-and-such a tax. If you have any question about it, check with someone in position to know. Moreover, don't be careless in these matters just because the small merchants around you pay no attention to them. The agent will be around to see them sometime, too.

CHRISTMAS DECORATIONS.

A subscriber asks for illustrations of outdoor Christmas decorations for nursery display purposes. If readers have photographs of such decorations from another year, they will do a favor by sending them to the editor. Perhaps reproduction in these pages will help others to develop Christmas business this year.

THE Lake County Nurserymen's Association will cooperate in an exhibit for the fourth home and flower show at Cleveland, O., February 21 to 28, 1942.

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Your Salesman Is Well Received

Your salesman is welcome—is invited—is paid to come!

He is well introduced—in good company—vouched for.

He calls when the prospect is not busy—is given full attention.

He reaches nearly 4,500 prospects—so is sure to make enough sales to please you.

That is, if your salesman is an advertisement in the American Nurseryman.

Enclosed check to cover our invoice and one more insertion of our advertisement. We have been very well pleased with results from our ads.—Heasley's Nurseries, Butler, Pa., October 19, 1941.

Credits and Collections

By William B. Hastings

There is no short cut to collection success. It is the result of hard work, concentration, repeated effort and some plan. The ideas presented here are those which I and others have found practicable. However, adopt nothing which does not conform to your own business. Adopt nothing which you do not understand. Adopt nothing with which you disagree. In fact, adopt nothing which you do not investigate. Above all, do nothing which will antagonize your customers.

Credit and collection are part of merchandising. The successful operation of a business, particularly a business that extends any form of credit, is based upon operations that may be expressed in these eight little words: Sell 'em. Collect from 'em. Sell 'em again.

That is what you do every day. First you sell the merchandise. Then you obtain payment for it, sometimes a little slowly if you did not apply proper credit principles. Then you sell the customers all over again. It is expensive to get new customers and more profitable to retain the old ones.

A cardinal principle is: Determine what you want to do, and do it. That may seem brusque, or it may seem farfetched. But let me elaborate a little. If you want to sell for cash, gear your prices for cash. If you want to take bad risks, set up a close collection policy. If you want to risk your money, get sufficient markup to protect your inevitable losses. The money you invest in your business is yours, but don't vacillate between credits and collections. Be definite and insist on definiteness.

Your collection problem is made in your credit policy. Wishful thinking does not make a good risk. Lackadaisical interpretation of credit information (ability to pay) does not make a good risk. You know, nine times out of ten, whether or not your risk is a good one. You make your own collection headaches. Be prepared for them and treat them accordingly.

Recent trade discussion on the subject makes timely this article by a credit manager in the furniture field, whose much longer talk on this subject at the annual meeting of Wisconsin nurserymen was hailed as an unusually practical and helpful discussion of a matter to which most nurserymen give inadequate attention.

In determining your credit policy you should set down a few simple rules to follow. Some of these will be determined by your own financial structure, more by the customer's financial structure and some on the merchandise involved. All generally come back to the three C's of good credit — character, capital, capacity. By these we mean (1) the buyer's personal character and habits, the inclination to meet obligations; (2) his capital or financial ability to pay or be made to pay if necessary, and (3) the capacity or ability to get the money by good business management or by reason of other income.

So, first of all, attempt to determine the prospective customer's character, find out about his capital and investigate his capacity. If you decide you would like to sell him, and your financial setup will justify the risk, go ahead and sell him. Then you know what you are doing.

But if the customer is slow, do not delay in your collection efforts. Accounts depreciate about as follows: In thirty days, 5 per cent; sixty days, 7 per cent; six months, 37 per cent, one year, 58 per cent. In five years they have no value.

Do not worry about delinquency of a month or two, however. Department store retail figures show that letters are sent to approximately one-half of the accounts within a period of a year. Department collections on 30-day accounts range between forty-five and fifty-five per cent monthly. This means that about half of the accounts pay regularly.

Furniture stores, on installment paper, find roughly twelve per cent delinquent at the end of ninety days and about twenty-one per cent delinquent at the end of one year.

The Federal Housing Administration, according to C. J. Martin, general manager of the National Consumer Credit Reporting Agency, has set up the following formula for evaluating the credit risk, in percentages: Character, 30; attitude toward obligations, 15; ability to pay, 15; prospects for future, 12; business history, 10; ratio value of property to annual income, 7; ratio monthly mortgage obligation to income, 6; associates, 5. These add up to 100 per cent.

Every merchant, of course, is aware of the fact that in extending credit he is in reality extending the customer a loan. He further realizes that he has to pay for the use of the money involved; so the customer, whether wholesale or retail, should pay this. He may be made to do so by your allowing a discount for cash, or by your charging a delinquent carrying charge, penalty fee or whatever it may be called, if the bill is not paid promptly. This is a good collection medium and will not offend the trade if properly handled from the start.

I shall dodge discussion of the registered letter, collection agency, use of attorneys, suit notice, assignments, bankruptcy and amortization plans, financial statements, etc. Briefly, I recommend that you stay as far away from these things as possible. Even when you win, you lose.

When you require legal action, get legal advice. Better yet, get legal advice before you need it.

To avoid the above-mentioned problems, all accounts, whether good or bad, should be followed regularly in collection procedure, and the more closely they are followed, the smaller the chance for loss. In time, this close follow-up will even lower collection costs, including postage, telephone calls, stenographer's time, etc. In addition, an intelligent, close follow-up system will cut down losses, avoid complaints, save payment of

interest and keep your capital more liquid.

"A careful analysis," said a president of the National Retail Furniture Association, "would indicate that retailers lose far more on slow accounts than from bad debts, and that the cost associated with slow accounts constitutes the most important item in the total cost of doing a credit business. If you are smart you will watch closely to see if there is to be any defection in the method of payment. Here is where the battle is won or lost."

Your outstanding collection medium, barring none, is yourself or your personnel. A friendly, understanding relationship with the customer at the time of purchase will do much to alleviate collection trouble. You know what you want, and you tell him, but in such a manner that he feels he had a part in determining your agreement.

While ill will cannot always be avoided in credit relationships, diplomacy and careful phraseology can avoid much of it. It is frequently wiser to fail to make a prompt collection by methods which create ill will. This is a matter of judgment, and such judgment should be guided by a fine sense of public relations value. The proprietor of a business must know that it is difficult to acquire good will, but quite easy to lose it by discourtesy, inconsideration or arbitrary methods.

Always greet the slow-pay customer, whether at his office or yours, as a friend. Never bellow at him. But do be firm. Try to show interest in the delinquent, interest on his part rather than just from your own side. Help him with his problems; you gain by collecting your money and by reselling him if you work out a successful salvage.

Statements are variously used in following up accounts. Some firms send only statements to delinquent accounts, at varying intervals of time. Sometimes a stamp or a small collection sticker is added. Sometimes different colors are used in the statements to delinquents. Sometimes a personal handwritten or typewritten note accompanies the statement.

You should have some definite system to handle your accounts, whether by card, ledger, binder or duplicate invoices. This should be both a book-keeping record and a collection rec-

ord. You should have some type of follow-up system, whether alphabetical, by date or by number.

Keep track of promises to make payment and follow them up. I have found, in several surveys, that about forty-five per cent of the promises are not kept within ten days of the time promised.

Stickers are an effective collection help, and an inexpensive one. They come in various sizes and various forms and carry various messages. They can even be made up to carry whatever you wish to say. Stick them on the statements and trust that the money will come in.

Give attention to a short payment or partial payment. Find out why the payment is not in full. Ask for further payment or information. Remind the customer of the delinquency, but in a polite way.

One of America's largest department stores says in its credit division manual: "It is believed that new customers should be educated from the inception of the account to meet our terms."

The most important part of collection procedure, aside from personal contact and the follow-up method, is the letter. I am convinced that letters can be as much of a handicap as they can be effective unless properly written. The emphasis in a letter on the customer's attitude, the "won't you please" appeal or the apologetic tone is useless if not carefully written.

A letter may be extremely successful in one line of business, but not work in another. Also, a firm with certain policies and recognized prestige can use a letter which other firms, even competitors, cannot employ. The letter depends upon the type of business and on the type of debtor. Second, the size and standing of the firm granting credit enters into the picture. The importance of the debtor as a customer is also vital.

The time an account is past due determines in a large measure the intensity of the letter—the older an account the more excuse for threats. However, it is agreed that it is not good practice to use letters that are too sharp, to say things that will irritate the recipient's feelings nor to use a negative approach.

Collection managers are by no

means in agreement as to best methods of mail collections. If you have a small number of accounts, the individually dictated letter is probably more effective and feasible. Where there are a large number of accounts, it may be possible to prepare form letters, according to the reasons for nonpayment or the basis of granting credit. The advantage of form letters is their impersonality, which may also be a weakness.

How to say to the customer, "You owe us money and we want that money, but we still want your business," is a hard thing. Just as most persons can speak freely to a group of friends, but freeze up on a platform, so otherwise confident businessmen become pompous or artificial in a collection letter. Be natural and, above all, be definite.

Let your letters carry a direct, personal approach. Avoid negative and meaningless openings, such as "good customers like you," etc. Be straightforward and not playful. Do not indulge in tricks or dodges. Collecting accounts is a serious matter to you, and you mean business. Avoid humorous collection letters, for there is nothing particularly humorous about an overdue account.

A gently insistent effort in correspondence is more effective than the "knock 'em down and drag 'em out" technique. Don't use hackneyed expressions. Be careful about weak-kneed closings. Don't deal in personalities. Avoid extraneous matter or preliminary verbal sparring. Plan your message and talk your message, and in doing so, talk simply and naturally. Remember consistency and the effectiveness of simplicity.

There are various reasons why customers will pay you—because they are sorry for you, they are afraid of you, it is to their advantage, they are fair and honorable, or they want your good will. Remember people don't pay out money willingly, credit record or no credit record.

Hence there is no short cut, no easy way to collect money. It requires time, patience and a system of some kind. Determine what you want to do, and then do it, remembering that your collection problem is made in your credit policy. Above all, remember that your business is built by your effort to sell 'em, collect from 'em and sell 'em again.

Changes of State Regulations in 1941

By Richard P. White

On January 1, 1941, the American Association of Nurserymen released a chart showing the requirements for interstate movement of nursery stock of all forty-eight states. This chart also indicated all intra-state and interstate quarantines then in force. The purpose of the chart was to focus attention upon the various rules, regulations and requirements of the states, some of which were claimed to be serving as trade barriers to the interstate movement of nursery stock.

However, like all such presentations, to be of value, it must be kept up to date, and your chairman has requested me to present the changes which should be made on this chart to accomplish this purpose.

1941 was a heavy legislative year, with forty-four state legislatures in session. Since many of the modifications sought by both regulatory officials and nurserymen required legislative amendment to existing laws, the year should have been a fruitful one. Such was the case. Other modifications were brought about by administrative action.

The modifications of which I am aware will be considered by plant board territories. It is contemplated that a revision of this chart will be made as of January 1, 1942, and between now and then all state officials will be contacted.

Eastern Plant Board.

Connecticut: The 1940 requirements called for a special Connecticut permit tag, as well as the state-of-origin tag, to be attached to each shipment of nursery stock entering the state. The requirement was not enforced. Some shippers complied; others did not. The special Connecticut permit tag requirement has been abandoned.

New Jersey: Several minor changes were made in the New Jersey plant inspection law, affecting in-state concerns. The state department of agriculture was granted legislative authority to enter into reciprocal agreements with other states. In common with Massachusetts and Maryland, New

At the meeting of the National Plant Board, representing the state regulatory officials of the country, at St. Louis, October 27, Dr. White recounted the changes in state regulations during the past year and suggested further modifications. The progress made in the elimination of trade barriers is a tribute to the cooperation of state officials and nurserymen.

Jersey used this authority, although none of these states had levied fees of any kind on the nurserymen of other states.

Suggested modifications:

(1) Pertaining to registration, filing or license fees: Two states in the Eastern Plant Board territory still require this fee from out-of-state nurserymen, a fee which constitutes a dual tax on the interstate movement of nursery stock. They are Maine, \$5, and West Virginia, \$15. In the latter case the fee is admitted to be for revenue-producing purposes, and since this revenue is admittedly used for the support of a state agency, it is clearly an unconstitutional levy. It is suggested that these states amend their state laws at their next legislative session of 1943 to eliminate these fees and thus bring their requirements into conformity with the other states of this territory. As an alternative, their laws could be amended, giving authority to the state regulatory officials to enter into reciprocal agreements with other states.

Virginia has on its statute books a license fee of \$10 applying to out-of-state concerns with agents operating within the state. Modifications are proposed in 1942, this state being one of four meeting in the even years.

(2) Pertaining to agent's fees: Three states of this territory, Maine, Virginia and West Virginia, require agents' fees of \$5, \$1 and \$1, respectively. Virginia is wrestling with this problem at the present, looking toward elimination of this require-

ment in 1942 by legislative action. Virginia is to substitute, according to present plans, a requirement that all concerns employing agents in the state must submit a list of those agents, without fee requirement, before a permit to do business in the state is granted. To us, this seems a proper requirement and is a compromise between those who believe a fee is necessary to obtain the list of agents from their principal, and others who object to payment of the fee. The state will obtain its list of agents, which it has a right to request, and this method of selling nursery stock will not be penalized.

We believe this is the solution to the agents' fee problem, and when agents' fees appear in later discussions in this paper, this is the solution which we would propose and sponsor.

Central Plant Board.

North Dakota: Prior to 1941 North Dakota has required by law a surety bond of \$500 from all out-of-state concerns doing business in that state and a fee of \$10 per agent from firms employing agents in the state. These requirements were not being enforced and have now been eliminated through the agency of full reciprocity power granted to the director of the North Dakota experiment station by the 1941 legislature. This authority extends to fees, bonds, special permit tags, special invoices, etc. Nurserymen residing in states availing themselves of this arrangement need only to file with the North Dakota authorities duplicate copy of their state-of-origin inspection certificate, required by all states in the Central Plant Board territory.

Suggested modifications:

(1) Pertaining to filing registration or license fees: (a) Mandatory fees: Only Kentucky and South Dakota still require fees from all out-of-state concerns doing business within the state, of \$5 and \$1, respectively. It is suggested that reciprocity authority be sought. (b) Fees required if agents employed: Indiana

and Michigan require fees of out-of-state concerns if those concerns employ agents within the state. The Michigan fee of \$15 is on a reciprocal basis. In lieu of these fees, which by their nature can result in little revenue, it is suggested that the proposed plan of Virginia be instituted.

(2) Pertaining to agents' fees: Kentucky, \$5 per agent; Ohio, Indiana, Michigan, South Dakota and Nebraska, \$1 per agent. See Virginia proposal.

Southern Plant Board.

Arkansas: There has been no change in the rules and regulations of this state, but Arkansas has entered into reciprocal arrangement, in so far as filing fees are concerned, with Louisiana, Texas and Oklahoma. The state also has indicated a willingness to enter into reciprocal negotiations with other states on the same complete basis now in effect between Arkansas and Missouri.

Georgia: Modification of Georgia's law now permits reciprocal arrangements with other states on the matter of fees and special state tags. Nurserymen in those states qualifying for reciprocity with Georgia need no longer pay the filing fee of \$5 or purchase special Georgia permit tags.

Louisiana: Requirements for special Louisiana state permit tags and the filing of duplicate invoices with Louisiana authorities have been eliminated for out-of-state concerns. Duplicate invoices still are required for in-state concerns.

Mississippi: Requirements for special Mississippi state tags and the filing of duplicate invoices have been eliminated.

Oklahoma: Partial reciprocity. States not levying fees on Oklahoma shippers will be allowed to do business in Oklahoma without payment of a filing or registration fee. States levying a fee of any amount on Oklahoma shippers will be charged a \$10 fee when nurserymen of such states ship into Oklahoma. This applies also to dealers' fee.

Texas: Reciprocal authority granted the commissioner of agriculture. Duplicate invoice requirement revoked. Texas, in its revised law, however, retained its requirement that a Texas permit tag, as well as the state-of-origin certificate, be attached to all incoming shipments of nursery stock.

Suggested modifications:

(1) Pertaining to special state permit tags: Still required by South Carolina, Florida, Alabama, Texas and Arkansas (except Missouri). With the exception of Texas, these states do not require the state-of-origin certificate on incoming shipments—only the state-of-destination permit tag. Texas requires both. Since the majority of states require only a single certificate and that one the certificate from the state of origin, shippers would be saved expense of special state-of-destination permits and their application during a busy shipping season, if these states followed the practice of a majority of others in eliminating the special state-of-destination permit tag on incoming shipments and required only the state-of-origin certificate. At the present time thirty-five states require only the state-of-origin certificate on all incoming shipments, eight require a special state-of-destination permit tag, two require both and three require neither.

(2) Pertaining to duplicate invoices: This requirement has been eliminated in three states in this territory this year and is still retained by two, South Carolina and Florida. This requirement is a most expensive and burdensome one to interstate shippers, retained now by only four states in the Union. None of the four require state-of-origin certificates on incoming shipments. Three require special state permit tags and one depends entirely on destination inspection. Are the other forty-four states wrong in their attitude on the value of duplicate invoices?

(3) Pertaining to agents' fees: Georgia, Alabama, Arkansas and Oklahoma retain an agents' fee of \$1 per agent. Suggest following the proposed Virginia plan.

Western Plant Board.

The situation in the Western Plant Board territory in regard to fees, bonds, special state tag requirements and duplicate invoices is the most varied, as between states, of any region, and no changes or modifications in the requirements of these states pertaining to the above have come to my attention.

Although no reports can be made on modifications in 1941 from this territory, we can offer some criticism,

in the form of suggested procedure, which we hope may be constructive.

Suggested modifications:

(1) In regard to state-of-origin certificates: (a) Filing: Only five of the eleven states in this territory require out-of-state shippers to file a copy of their state-of-origin certificate, depending on special state-of-destination permit tags, duplicate invoices, border, post-office, terminal or destination inspections and combinations of these. It would seem that a copy of the out-of-state nursery inspection certificate on file in the destination state would mean something as to the probable pest condition of the stock originating in the out-of-state nursery, and should be required. (b) Attachment to incoming shipments: Four states do not have this requirement; seven do. Again, it would seem that the presence of this state-of-origin certificate would mean something to the inspector if attached. It would certainly indicate an inspection by a state official and an origin from a certified concern.

(2) Pertaining to registration, filing or license fees: These vary from nothing to \$25, and only one state, Washington, has reciprocal authority. It is suggested that (a) the six states with these fee requirements either eliminate them or seek reciprocal authority for dealing with other states.

(3) In regard to bonds: The only two states in the Union still requiring surety bonds on all out-of-state concerns doing business within the state exist in this territory, Montana and Wyoming. Three other states in the Union maintain bond requirements for special purposes, for which a justification might be successfully argued, conditions which, with one exception, rarely are met. Wyoming unsuccessfully attempted in its 1941 legislature to amend its laws. It is suggested that these last two bond requirements be revoked at the earliest opportunity.

(4) In regard to special state permit tags: It is suggested that Wyoming rescind its requirement for a special Wyoming permit tag and substitute a requirement for the state-of-origin certificate to be attached to all incoming shipments, and that New Mexico, which requires both, rescind its special permit tag requirement.

(5) In regard to duplicate invoices: Washington and Wyoming

are the only two states in this territory with this requirement. See remarks under Southern Plant Board territory.

The changes of 1941 reported above indicate a definite trend on the part of state regulatory officials to eliminate those requirements and burdens on interstate movements of nursery stock, which can be eliminated without jeopardizing their pest control procedures. Great strides have been made in eliminating from this picture the stigma of "trade barriers" which settled upon us. However, the pot of gold has not yet been reached. We have not yet arrived at the end of the rainbow, and we have suggested what still remains ahead.

Responsibilities.

With this evident trend come added responsibilities to state regulatory officials and to interstate shippers of nursery stock. The state regulatory official, operating under reciprocal arrangements with his fellow officers of other states, has even a greater responsibility to his fellow workers than ever before, to insure that the confidence placed in him has not been misplaced. He has also, as a state official, an added responsibility to the nurserymen in his state, to insure that they are given all help and advice possible to enable them to produce for shipment pest-free commodities.

The grower, on his part, must assume an added responsibility, too. Shippers have been complaining for many moons about many requirements which have been imposed upon them. As aptly stated by a former chairman of this board, "It was not the plant quarantine officials who were howling, but the nurserymen, and the plant quarantine officials offered to assist with the view of helping the nurserymen." They have helped, and it is this broad viewpoint which has resulted in the accomplishments of the past year.

Realizing this, the grower has a responsibility to his regulatory official to cooperate with him more closely than ever, to protect his favored position with his fellow officials, as well as to protect his own reputable standing in the trade. This is a partnership—and a closer and closer partnership—into which regulatory officials and the growers are entering. The responsibilities are divided. We look

to this group for continued cooperation on these problems, and you have our assurance that we, in turn, stand ready to assist you with yours.

PROPOSE GURNEY SALE.

Creditors of the House of Gurney, Inc., Yankton, S. D., which filed a petition in bankruptcy September 16, were notified to meet October 30, at the office of Referee P. G. Honegger, Sioux Falls, S. D., to take action on the report, filed October 17, by B. F. Lockwood, trustee, that he sold at private sale as a going concern all of the real and personal property of the bankrupt to Nancy W. Gurney for \$10,000 in cash, subject to all encumbrances and liens, in-

of about \$364.53 and taxes of about \$760, the remainder to be distributed to the unsecured creditors, including the holders of debentures, leaving nothing for the class A or class B stockholders. The unsecured claims as scheduled by the bankrupt totaled \$125,837.34.

TALKING THINGS OVER.

On any outing of nurserymen there will be seen little groups like that in the illustration on this page engaged in earnestly talking things over. This group was photographed at the Kansas nurserymen's field day, at McPherson, reported in the October 1 issue. Those engaged in the discussion are, from left to right,



Talking Things Over at Kansas Nurserymen's Field Day.

cluding taxes. Under the sales agreement, the trustee was to continue the operation of the bankrupt's business and the net funds from such operation were to belong to Nancy W. Gurney to be applied on the purchase price. According to the trustee's report, the property sold had been appraised at \$161,588 and was encumbered by mortgage deeds, chattel mortgages, warehouse receipts and prepaid leases aggregating, with taxes, about \$128,700 plus interest. The trustee reported that the bid of Nancy W. Gurney was the highest obtainable and recommended confirmation. The referee stated that from the \$10,000 proceeds of this sale, if confirmed, there would have to be paid, first, the costs of administering the estate; next, labor claims

Ralph Ricklefs, Kansas Landscape & Nursery Co., Salina; Ernest Worden, Wellington Nurseries & Greenhouse, Wellington; Fred C. Schnitzler, Hillside Nursery, Wichita, B. H. West, Western Nurseries, Wichita, and Arthur E. Willis, Willis Nursery Co., Ottawa.

FILING a voluntary petition in bankruptcy, Edwin Talbot Wyatt, 355 Columbus avenue, Valhalla, N. Y., landscape gardener, lists liabilities of \$4,234 and assets of \$4.

SOUTHERN California nurserymen held an old-fashioned Halloween party at the nursery of Roy F. Wilcox & Co., Montebello, Cal., October 30. Costumes were worn, and much fun was provided.

Let's Swap Ideas

DIGGING EVERGREENS.

If we nurserymen are to have a worth-while magazine like yours, I suppose it is up to us to send in an account of our better ideas occasionally. A method of moving larger evergreens (6-foot to 12-foot), which I have used for some years, I find saves time and topsoil in contrast to the usual solid ball method, by which one loses too much root system and has too much weight to lift.

Near the trees to be dug I dig a rather small hole in the shape of half a ball. I spread a piece of thin burlap over this. Next I dig the evergreen bare root, being careful to dig far out and get all the roots it has. The tree is then lifted at once and placed in the sack. The roots, having been cut back a few years previously, are easily bent around in the hole so as to form a much smaller ball than the usual one. Moist topsoil is immediately thrown over the roots into the sack so that they will not be exposed over a minute or so. One man holds the tree erect and with one foot firmly tamps the soil as another man shovels it into the sack. Often the soil will not fall out of the center of the root mass if the tree is lifted carefully. The opposite corners of the piece of burlap are next crossed and pulled as tightly as possible, while the top half of the ball is whacked into shape and made firm. We use No. 5 box nails to pin the burlap tightly and neatly together. Nails seem better and cheaper than twine or light rope. Of course, the trees should be replanted as quickly as possible, as well as exactly at their former depth, and kept well watered every two or three days.

Trees can be dug thus in late March, when the soil is too muddy to make the usual solid ball, or when the soil is thoroughly dried and too crumbly to hold a soil ball, as in early August. Out of eighty-five Austrian pines from four to six feet high moved thus a few years ago, we did not lose a single tree.

We generally root-prune and transplant all our evergreens here in the nursery every three years by this method (or bare root) and have exceedingly small losses, but for lack

Many readers have commented that they receive much more than their money's worth for the small subscription price of this magazine. Here is one who, by his offering in return, suggests something which may make the paper of even more value. If you feel the same, send in your ideas from which other nurserymen may profit. It may be a short item, a longer description, or a picture. Make this page a clearing house for readers' ideas.

of a way to keep them watered, they take hold rather slowly and are set back for about two years, but they have then cheaply become first-class stock. W. H. K.

CONNECTICUT NURSERIES.

The number of Connecticut nurserymen who received inspection certificates in 1940 was 376, a decrease of twenty-three from the preceding year, according to the report of the Connecticut state entomologist, recently received. Eleven new nurseries appeared in the list, and thirty-four discontinued business. The area of those receiving certificates in 1940 was 4,859 acres, an increase of twenty-six acres over 1939.

Almost half, or 182, of the nurseries were of one acre or less. Ninety-four contained from two to four acres; thirty-five, five to nine acres; forty-seven, ten to forty-nine acres, and nineteen, fifty acres or more, according to the report of M. P. Zappe, chief inspector.

1939 CENSUS FIGURES.

In the 1939 census, figures were obtained on the farm schedule regarding horticultural specialties, in three categories, flowers and plants grown under glass, seeds and bulbs grown in the open, and products of nurseries. Figures released last month as to the production and sale of nurs-

ery products in 1939 include only the number of farms (nurserymen are farmers under some federal interpretations) reporting, area in acres and annual sales.

In the special horticultural census of 1929 other figures were obtained. That census of ten years before showed 7,208 "producing nursery establishments" with a total acreage of 140,736 and total sales receipts of \$63,117,515.

While the number of those reporting was about ten per cent higher in 1939, the acreage was considerably less, due doubtless to more intensive cultivation after the boom era, and sales receipts were about one-half, a reflection of the low prices obtained for nursery products since the depression.

The figures by states for 1939 are as follows:

	Farms re- porting	Area in acres	Sales
Alabama	84	2,135	\$ 515,890
Arizona	34	92	73,209
Arkansas	78	953	175,774
California	750	4,174	3,567,347
Colorado	95	491	242,526
Connecticut	163	2,561	998,101
Delaware	21	947	177,761
Dist. of Columbia	4	11	26,265
Florida	469	2,682	1,114,447
Georgia	129	1,631	352,559
Idaho	30	80	40,343
Illinois	280	4,289	1,656,502
Indiana	185	1,280	607,741
Iowa	143	2,575	1,317,121
Kansas	124	1,496	411,254
Kentucky	66	544	278,246
Louisiana	109	695	233,964
Maine	39	111	50,221
Maryland	101	2,546	640,874
Massachusetts ..	219	1,876	1,142,653
Michigan	316	2,394	970,911
Minnesota	155	3,087	826,543
Mississippi	77	743	181,063
Missouri	129	1,321	407,161
Montana	31	80	39,995
Nebraska	62	650	326,699
Nevada	3	7	4,604
New Hampshire ..	35	171	73,493
New Jersey	299	3,379	1,556,627
New Mexico	24	45	19,642
New York	549	6,890	3,575,448
North Carolina ..	143	1,433	365,245
North Dakota	23	318	71,908
Ohio	485	5,813	2,125,513
Oklahoma	123	1,906	461,849
Oregon	255	1,472	504,397
Pennsylvania	445	4,694	1,495,581
Rhode Island	30	410	211,717
South Carolina ..	52	432	116,502
South Dakota	23	528	205,314
Tennessee	275	3,190	556,766
Texas	727	8,681	1,648,838
Utah	42	121	56,823
Vermont	13	96	43,560
Virginia	129	2,902	977,022
Washington	284	867	417,399
West Virginia	28	134	50,160
Wisconsin	167	1,014	465,825
Wyoming	9	31	2,950
Total	8,056	83,978	\$31,382,353

This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By Ernest Hemming

TREES THAT SURVIVED.

To a plantsman it is a fascinating experience to visit the old colonial gardens of Maryland and tidewater Virginia and study them from a horticultural point of view. Of course, it is only the most persistent plants and trees that survived the neglect following the Civil war, the boxwood being the most notable. This dwarf boxwood was brought in colonial times from England, where it was used to edge walks and flower beds and where it was rarely allowed to grow more than six inches high or so; in fact, its slow growth, compactness and neat habit formed its chief value.

I recall when a boy in England a periodical spring routine job was to dig up the box edging, chop off a good part of the roots and reset the line. This dwarf boxwood in the new world, left to itself for nearly a century, has grown into hedges to varying heights up to twenty feet or so, according to the particular type. One can almost trace the relationship of the different types of the boxwood from one plantation to another.

In addition to the dwarf box used as edging, *Buxus suffruticosa*, there is often to be found a specimen or two of the tree box, *Buxus arborescens*, and a variegated variety of it, this up to the height of fifty feet or so.

An old English yew, *Taxus baccata*, is occasionally met with, having persisted and attained noble proportions. Just recently we were called upon to transplant two noteworthy specimens of the Irish yew, *Taxus baccata fastigiata*, which were thirty-five feet high. Nurserymen who are familiar with this attractive plant in its juvenile form will be interested in its matured form. It is a plant that has class at any age.

The holly is, of course, native, but to know really what the plant is like one has to see one of these old specimens, selected and planted about a century ago, carrying a full crop of berries.

Among the deciduous trees that

were brought from England and planted in the colonial gardens, the one that seems to have done the best is the English linden, *Tilia europæa*, which is frequently met with, in noble proportions with huge buttressed trunks and perfect tops. This particular tree seems to escape being broken by storms and lightning more than other kinds.

Some time ago the writer had to report on the trees on an old estate on Wye island. In the vicinity of the mansion there were no trees worthy of note except twenty-five English lindens. One could almost read their history by their size, age and location. Evidently they were a bundle of twenty-five from some English nursery brought over in a sailing ship. Twelve of them were planted, properly spaced, six on each side of the grounds, forming a setting for the mansion. These are still all fine specimens of noble proportions. The other thirteen were evidently heeled in or planted a few feet apart in what was evidently the kitchen garden, but were never transplanted; so they now

form a group or grove growing as one, apparently as healthy, although not so large as those planted wider apart.

E. H.

SHIPMAST LOCUST.

Shipmast locust, *Robinia Pseudo-Acacia rectissima*, is to be grown in quantity on the school training grounds of the Deerfield Foresters, at Cooperstown, N. Y., of which the head is George Van Yahres. Two years' trial showed that the young shipmast locust trees flourished there, and now it is planned to produce sufficient for a reforestation program. Because of the scarcity or absence of seeds, the shipmast locust is propagated only by means of root cuttings, top cuttings or sprouts.

Trees of this variety, reported to have been introduced on Long Island in 1683 by Captain Sands, are said still to stand at Roslyn and Glen Cove. Reports of the remarkable durability of the wood have caused the federal government to take interest in its wider production.

AS part of the public school system there, the San Francisco junior college offers a 2-year course in floriculture and nursery practices for students who wish to prepare for employment. The course is now in its third year.



Ancient Irish Yews at Accomac, Va.

Natorp's Personnel Work

While the talks on various forms of nurserymen's advertising by William A. Natorp before national and state associations have indicated how thoroughly he has tried the various media of sales promotion, a visit to his nurseries at Cincinnati, O., shows an equal alertness in other directions. Business is active even in midsummer, and he makes the statement that the four summer months equal in volume of business the two and one-half months of the spring season. He declares that almost all trees a nurseryman grows can be transplanted in hot weather, except flowering cherries and some poplars. He finds an extra transplanting in the field makes it more successful.

By stabilizing the work the year around, he maintains a higher standard of personnel than if many of the men were off at slack seasons. As he estimates that forty-five per cent of landscape work is labor, the efficiency of the men is highly important. He believes that their morale is supported by their uniforms, acquired after a year's employment, a house organ and employees' parties, a bowling session in winter and a picnic in summer. A sign at the entrance of the nursery gives notice that it closes at 5:30 p. m.—there is no evening or Sunday work. Vacations are given to the men. They may join in a plan for hospital care, but he has not found insurance policies attractive.

At the home office a room has been fitted up with benches and tables, radio, magazines and a Coca-Cola cabinet, where the men may assemble on cold mornings, eat their lunch when not out on jobs and while away the time when rain might disperse them. It is called the pinochle room because that is the favorite card game.

At headquarters, 4400 Reading road, is twelve acres, including the office, sales beds, storage houses, garages, etc. In the grounds adjoining may be seen some fine specimens of less common plants, maintained in excellent condition. The two outlying nurseries are each of fifty acres and include a wide assortment of evergreen and deciduous trees and shrubs for the varied types of landscape planting the firm does. Notable is

the quantity of young taxus plants lined out, eventually to take the place of the large stock of specimen sizes sold off in the past few years. Driving through the nurseries is made easy by the arrangement in square blocks, with the roads marked "Oak Lane," "Spruce Lane" and the like. An addition this summer was a lath house, built of snow fence wired to a pipe-frame structure, further aid to the propagation of less easily grown plants. Some stocks of perennials are grown, and trials of newer things are constantly made. To the sales ability of Mr. Natorp is coupled the close direction of Thomas E. Medlin—"Bert" to visiting nurserymen—whose capacity for detail is a byword.

ROBERT A. GIBBS.

When a group of nurserymen sought to form the Southern California Nurserymen's Association in recent months, leaving the Southern California Horticultural Institute as an organization to promote amateurs' interest, they chose as chairman Robert A. Gibbs, whose guidance augurs an aggressive and effective organization.

Mr. Gibbs, who has been affiliated with the seed business for thirty years and is now head of his own organization, Winsel Gibbs Seed Co., Los Angeles, was born in that city. He is a member of the B.P.O.E. and also the International Footprinters' Association. He recently enlarged his organization, combining store, office, warehouses and nursery.



Robert A. Gibbs.

SOUTHWESTERN NEWS.

Ross R. Wolfe, president of Wolfe's Nursery, Stephenville, Tex., left October 9 for Arkansas and Tennessee to visit nurseries. Mr. Wolfe reports a good demand for fruit trees, especially peaches.

John Rogers, who has been in charge of the shelter belt nursery for the United States Forest Service at Abilene, Kan., has resigned that position and gone to Fort Leavenworth, Kan., as landscape gardener. Mr. Rogers is the son of Tom Rogers, of the Winfield Nurseries, Winfield, Kan.

Efforts are being made to establish an arboretum in Kansas. Several organizations are coöperating, including the Kansas Association of Nurserymen, the Kansas industrial development commission, the Association of Kansas Landscape Architects and the Federated Garden Clubs of Kansas. The proposed site is near Lawrence. The sponsoring organization would be the University of Kansas, which already owns the site under consideration, a partly wooded tract of over 500 acres.

The United States Forest Service at Lincoln, Neb., received bids October 20 from commercial nurserymen in Kansas and Nebraska on growing deciduous tree seedlings for planting in shelter belts. The Kansas bids called for 750,000 seedlings of six different species, viz., Osage orange, Chinese elm, American elm, Russian mulberry, black locust and honey locust.

ALL stock of the Victory Nursery, 13609 Victory boulevard, Van Nuys, Cal., is being sold. W. W. Cunningham, who has operated the business for six years, is discontinuing the nursery and is building a garden supply store.

THE tenth in the series of talks over station WBZ-WBZA by members of Massachusetts Nurserymen's Association was given October 31 by Richard Wyman, of Framingham, Mass., on "Fruiting Trees and Shrubs for Birds and Color." The November talk, "Trees and Shrubs for Winter Effect," will be given by Lester Needham, Springfield, Mass. The New England Radio News Service has invited the association to continue the program of monthly talks in 1942.

Scientific Approach to Plant Breeding

By Dr. S. L. Emsweller

Everyone who works with plants realizes that even within a variety there exists a considerable variation between sister plants. These variations are subdivided by the scientist into modifications and true variations. Most plantmen are thoroughly familiar with both, but the modifications are the ones that give the individual the most difficulty. The scientist terms as modifications those variations caused by the environment—soil, water, temperature, etc. He distinguishes variations as those differences caused by heredity. Even here reservations frequently have to be made. As an example, the color of flower, while determined basically by heredity, is often greatly modified by environment. A plant may bear red flowers, and may be pure for flower color, yet its seedlings may show very slight differences in shades of red as a result of low or high temperatures or because of varying pH in the soil. This effect of environment on a hereditary character has been cited to show that even a geneticist has an appreciation of the complexity of explaining why plants can behave so extraordinarily.

Scientists like to reduce things to a formula whenever possible, and while formulæ can be tiresome, they sometimes express briefly what it may take many sentences to say. The layman should not be bothered with a lot of technical terms, but there are a few which should be known and understood by all plantmen. When one looks at a plant of *Azalea indica* one sees something that has stems, leaves and flowers, if in season, and it is known at once it is an azalea because one knows what an azalea should look like and the plant in question fulfills all the known requirements. Geneticists have a single word which means all that, and the word is phenotype. Form, height, color of flowers, size and shape of leaves—all of these combined characters are what make the plant what it is, and this is all summed up in the word phenotype. The formula is: Phenotype = heredity + environment. Every plantman is thoroughly familiar with this, and he wishes that all his customers knew it as well.

Glimpses of the scientific knowledge of natural causes for plant variations and of the effects of chemical stimulus, as aids in hybridizing, were given Maryland nurserymen at their recent short course by the head of ornamental plant investigations at the station of the federal bureau of plant industry at Beltsville, Md., reported here by J. J. Chisolm.

To continue by a further analysis of the azalea in question: Suppose a cloth frame is put over it, and it sets seeds under this frame. Thus one is assured that all the seeds secured will be from its own pollen or that the plant will be self-pollinated. When a number of seedlings are grown from this azalea much more will be found out about this phenotype. It can now be seen whether it is pure for flower, color, form, shape and size. It can also be seen whether it is pure for leaf type and all of its many other characteristics. As a geneticist would say, he is finding out something about its genotype, or type of ancestry. Now, if this plant gives seedlings which all look exactly like the parent, or in other words all have the same phenotype as the parent, it is said that the parent is pure for all its characters. If, however, a wide variation is obtained in the seedlings, it is known immediately that the parent was a hybrid. Briefly then, the phenotype gives no clue whatever to the genotype, and the latter can only be determined by growing self-pollinated seedlings.

I imagine you are wondering by now just what all this has to do with breeding new shrubs. Well, suppose you were to ask how I should start out on a shrub-breeding program. First of all, I should want to have the help of a good practical grower who knew the various varieties and types already in existence. In other words, he would be my phenotype man. Unfortunately, no one knows what the genotypes are; so we should both be even on that score. I should then try to self-pollinate all these types and also make all

cross combinations. You will say that this would certainly be a great undertaking, especially with some plant that had dozens and dozens of varieties and forms. In that case, we should only work on a portion at a time, but we should grow fairly large numbers, especially of each cross population. By large, I mean 200 to 500. The reason for this is that we may have only a few chances out of a hundred to get something superior, and we have no way of predicting just what combination of parents will give it. If we are fortunate, we may discover some particular two parents which will give a high percentage of worth-while offspring, or we may even find that some variety yields high-quality seedlings when self-pollinated. All that I have been saying simply means that we do not know anything about the ancestry of most shrubs, and the shotgun breeding method I have just outlined is the only approach until we have accumulated many more facts. From one point of view anything that cannot be predicted is not scientific. We know, for instance, that 2 times 2 always gives 4, and that certain ingredients can be mixed and always produce the same thing. This is certainly not true in shrub breeding, unless there are some instances that have escaped me.

Fortunately, there is another source of variations to draw from. These are the spontaneous mutants, or sports, that come, no man knows when or how, and from which many of our finest ornamental plants have arisen. In some instances it is known what has happened to produce the new mutant, but until recently it has not been possible to do much about it. For instance, there are on record cases where a plant suddenly produced a side shoot which bore larger leaves and flowers. Whenever possible, these new shoots have been propagated by cuttings and introduced as a new variety. Probably many of our present-day varieties arose in this way. Sometimes the new shoot simply bore flowers of a new color or had some new leaf character. In some of the instances in which larger flowers were produced, it

was shown that the chromosome number of the new shoot was doubled.

Recent work has revealed that several drugs are capable of inducing this chromosome doubling. The most efficient of these is colchicine, which is derived from the fall-blooming crocus, *Colchicum autumnale*.

The question may arise, "What are chromosomes and why does the doubling of their number usually result in larger flowers?" Chromosomes are minute bodies in the nucleus of all living cells that transmit hereditary characteristics from parents to offspring. In general, when the chromosome number is doubled, the resulting plant is more vigorous, bears larger leaves and flowers, usually blooms later and, in many instances, does not grow so tall as the undoubled parent. There is a fertile field for investigations along this line and one that may yield some fine new things.

Some marigolds developed by Dr. and Mrs. Nebel, of the New York state agricultural station, Geneva, are an example of what already has been accomplished by the use of colchicine. The natural type was small-flowering plants with the normal chromosome number, while giant-flowered ones with blooms from six to eight inches in diameter had the chromosome number doubled.

Results like the above cannot be expected with all plant materials. Some double-flowered stocks were produced of twice the regular chromosome number, and while they were larger-flowered, the increase was nothing like that attained with the marigolds.

In applying colchicine, it must be realized that there is no generalized method or technique that can be used on all plants. It has been found necessary to vary the concentration of colchicine used and also the time of treatment. Plants in different stages of growth also require varying concentrations. The drug is exceedingly poisonous and should be used only with the greatest of caution. In fact, its general use is being discouraged. It is particularly dangerous if there are cuts or abrasions on the hands of the operator, and great care must be exercised that none of the solution splashes in the eyes.

Naphthaleneacetic acid has also been found to double the chromosomes, but it does not work so smoothly as colchicine. Other chemicals in the alkaloid group are being tried.

J. C. C.

Coming Events

ON THE CALENDAR.

The following list of meetings the coming winter includes those whose dates are known to have been set.

Secretaries of other state associations are invited to send announcement of date and place, so that it may be included in the next issue.

November 21, Western Pennsylvania Nurserymen's Association, Roosevelt hotel, Pittsburgh.

December 9 and 10, Minnesota State Nurserymen's Association, Lowry hotel, St. Paul.

January 6 to 8, Western Association of Nurserymen, Muehlebach hotel, Kansas City, Mo.

January 7 and 8, Ohio Nurserymen's Association.

January 13 to 15, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 21 and 22, Indiana Association of Nurserymen, Antlers hotel, Indianapolis.

January 27 and 28, New Jersey Association of Nurserymen, Hotel Hildebrecht, Trenton.

January 28 and 29, Michigan Association of Nurserymen, Hotel Hayes, Jackson.

TO MEET AT PITTSBURGH.

The Western Pennsylvania Nurserymen's Association will hold its fall meeting November 21 at 2 p. m., at the Roosevelt hotel, Pittsburgh. This will be an afternoon and evening meeting. Dinner will be served at 6:30 p. m. The Blue room has been reserved for the meeting. An interesting program is being arranged.

Election of the officers for the coming year will be held. All members of the trade are invited.

L. E. Wissenbach, Sec'y.

PLAN CHICAGO SHOW.

Otto Clauss, of Clauss Bros., landscape architects, Chicago, has been engaged to lay out the national flower show of the Society of American Florists, to be held at the International Amphitheater, Chicago, March 15 to 22, 1942. The large garden exhibits, from 600 to 1,000 square feet, will not be included in the scheduled classes receiving awards, but arrangements will be made with nurserymen and florists to set up exhibits on a subsidy basis of 75 cents per square foot, allowing wide latitude for design and plants to be used.

NEW JERSEY NOTES.

The winter meeting of the New Jersey Association of Nurserymen will be held January 27 and 28, at Trenton, during agricultural week. The date of the A. A. N. eastern regional meeting, to be held at Garden City, N. Y., will be set November 14, when a committee from the Long Island Association of Nurserymen will meet with Frank LaBar, A. A. N. executive committee member, and Charles Hess, chairman of the eastern regional group.

Nurserymen in New Jersey, as well as elsewhere on the north Atlantic seaboard, have been severely handicapped by the dry weather. No rain fell during the month of September, when temperatures were high, and the light rains in October were followed by strong winds. Charles Hess, Mountain View, N. J., says: "There is no question that it has affected business a great deal. In general, our local men with landscape business have done rather well, but roadside markets are complaining about poor business. This may be partly due to war conditions, although people are buying nursery stock who did not do so before."

The dry weather is doubly a setback because it prevents work being done in the nurseries this autumn to alleviate the spring rush. This is the more important now when labor conditions are unfavorable, the only help available being young boys and old men, the others being absorbed into the defense industries, of which New Jersey has a large share.

NEW PLANT PATENT.

The following plant patent was issued October 7, according to Rummeler, Rummeler & Davis, Chicago patent lawyers:

No. 491. Carnation plant. John W. Steidle, Jr., St. Louis, Mo. A new and distinct variety of carnation with qualities in combination, characterized particularly by its heavy growth; its unusually wide, dark foliage; its prolific production of shoots which make it capable of rapid reproduction; its consistency of large flower size even in warm weather; its pure white, evenly formed flowers, with intense cinnamon fragrance and remarkable lasting qualities; its long bud which opens slowly and in a distinctive pinwheel formation, and the heavy substance of its flower petals.

Selection of Broad-leaved Evergreens

By L. C. Chadwick

In the articles dealing with the selection of woody broad-leaved evergreens it has been necessary to limit the discussions pertaining to the uses of the plants selected and their adaptability to various environmental conditions. The following lists have been prepared as an aid to the use of these plants and to afford a source of information to which one may turn to find plants suitable for definite purposes.

These lists are not intended to be all-inclusive. They include, in the judgment of the compiler, many of the best of the woody broad-leaved evergreens for the various conditions given and when used under Ohio conditions or in regions where environmental conditions are similar. For the most part the choice is limited to the selected plants in each size group. Where the plants in the secondary list are especially suitable for some purpose, or exhibit outstanding characteristics, they are included in these lists. The genera, species, varieties and forms omitted are usually not so suitable for general use, because of less effective habit of growth and foliage or more exacting cultural conditions or because they are exceptionally rare in the trade.

Preceding lists on habit of growth and culture appeared in the October 15 issue.

D. USE

(1) Plants for sandy soils

Group 1

Euonymus fortunei (radicans)

Group 2

Arctostaphylos uva-ursi
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Gaylussacia brachycera
Hypericum calycinum
Potentilla tridentata
Vinca minor bowles

Group 3

Euonymus fortunei (radicans) carrierei
Leiophyllum buxifolium
Yucca filamentosa

Group 4

Euonymus kiautschovica (patens)
Mahonia aquifolium
Pyracantha coccinea pauciflora

Group 5

Pyracantha coccinea lalandi

Group 6

Elaeagnus pungens reflexa
Ilex opaca

Myrica cerifera

Group 7

Quercus laurifolia (S)

(2) Plants for wet soils

Group 2

Andromeda glaucophylla
Rubus hispidus

Group 3

Chamaedaphne calyculata
Ledum groenlandicum compactum

Group 4

Ilex glabra

Group 5

Kalmia latifolia
Rhododendron maximum

Group 6

Ilex opaca
Magnolia virginiana (glauca)

Group 7

Quercus laurifolia (S)

(3) Plants for heavy clay soils

Group 1

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) vegeta

Group 2

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Pachistima canbyi
Vinca minor bowles

Group 3

Euonymus fortunei (radicans) carrierei

Group 4

Euonymus kiautschovica (patens)
Pyracantha coccinea pauciflora

Group 5

Pyracantha coccinea lalandi

(4) Plants that are drought resistant

Group 1

Euonymus fortunei (radicans)

Group 2

Arctostaphylos uva-ursi
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Potentilla tridentata
Vinca minor bowles

Group 3

Berberis verruculosa
Euonymus fortunei (radicans) carrierei
Leiophyllum buxifolium
Yucca filamentosa

Group 4

Berberis julianae
Euonymus kiautschovica (patens)
Ilex glabra
Mahonia aquifolium
Pyracantha coccinea pauciflora

Group 5

Buxus sempervirens angustifolia
Cotoneaster salicifolia floccosa
Pyracantha coccinea lalandi
Viburnum rhytidophyllum

Group 6

Ilex opaca

(5) Plants for congested city districts

Group 1

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) vegeta
Hedera helix and varieties

Group 2

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Mahonia repens
Pachistima canbyi
Vinca minor bowles

Group 3

Berberis verruculosa
Euonymus fortunei (radicans) carrierei
Ilex crenata convexa
Yucca filamentosa

Group 4

Berberis chenaulti
Berberis julianae
Berberis triacanthophora
Euonymus kiautschovica (patens)
Ilex glabra
Mahonia aquifolium
Pyracantha coccinea pauciflora

Group 5

Buxus sempervirens angustifolia
Buxus sempervirens arborescens
Cotoneaster salicifolia floccosa
Ilex crenata microphylla
Pyracantha coccinea lalandi
Viburnum rhytidophyllum

Group 6

Elaeagnus pungens reflexa
Ilex opaca

Group 7

Magnolia grandiflora

(6) Plants for exposed lake front conditions

Group 1

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) vegeta

Group 2

Arctostaphylos uva-ursi
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Pachistima canbyi
Vinca minor bowles

Group 3

Daphne cneorum
Euonymus fortunei (radicans) carrierei
Ilex crenata convexa

Group 4

Ilex glabra
Mahonia aquifolium
Myrica cerifera pumila
Pyracantha coccinea pauciflora

Group 5

Ilex crenata microphylla
Pyracantha coccinea lalandi

Group 6

Ilex opaca
Magnolia virginiana (glauca)

(7) Plants for shady conditions beneath trees and north side of buildings

(a) Tolerate shade and wet soil conditions

Group 2

Rubus hispidus

Group 3

Kalmia latifolia myrtifolia

Group 4

Ilex glabra

Group 5

Kalmia latifolia

Group 6

Magnolia virginiana (glauca)

(b) Tolerate shade and dry soil conditions

Group 1

Euonymus fortunei (radicans)

Group 2

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Vinca minor bowles

Group 3

Euonymus fortunei (radicans) carrierei

Group 4

Euonymus kiautschovica (patens)
Ilex glabra
Mahonia aquifolium
Pyracantha coccinea pauciflora

Group 5

Pyracantha coccinea lalandi
Viburnum rhytidophyllum

Group 6

Ilex opaca

(c) Tolerate shade and normal soil conditions

Note: Those in (a) and (b) are satisfactory under normal soil conditions.

Group 1

Euonymus fortunei (radicans) vegeta
Hedera helix and varieties

Group 2

Hedera helix and varieties
Mahonia repens
Pachistima canbyi
Pachysandra terminalis

Group 3

Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Ilex crenata convexa
Pieris floribunda
Rhododendron indicum (hybrids)
Rhododendron obtusum amœnum coccinea
Rhododendron obtusum japonicum

Group 4

Buxus sempervirens Lynn Haven
Leucothoe catesbaei
Pieris japonica
Rhododendron carolinianum
Rhododendron carolinianum album
Rhododendron catawbiense
Rhododendron hybrids

Group 5

Buxus sempervirens angustifolia
Buxus sempervirens arborescens
Ilex crenata microphylla
Rhododendron maximum album
Rhododendron maximum purpureum

(8) Foundation plantings

(a) Entrance plants

(I) Globose, symmetrical types

Group 3

Berberis buxifolia pygmaea
Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Ilex crenata convexa

Group 4

Buxus sempervirens handsworthii
Buxus sempervirens Lynn Haven
Ilex glabra
Pyracantha coccinea pauciflora

Group 5

Buxus sempervirens angustifolia

(II) Upright, symmetrical types

Group 4

Berberis julianae B.P.I.

Group 5

Ilex crenata microphylla
Ilex crenata rotundifolia

Group 6

Ilex aquifolium pyramidalis compacta
Ilex opaca (selected types)

(b) Other than entrance plants

Note: Vines and ground covers can be used successfully.

(I) Beneath low porches or windows (below 3 feet)

Group 3

All plants in selected list

Group 4

Slow-growing types in selected list

(II) Beneath medium-high porches or windows (3 to 6 feet)

Use those in size Group 4 and slower-growing types in Group 5. For facing use those in Group 3.

(9) Border plantings

(a) Plants with excellent foliage for background planting or for screen planting to hide objectionable views

(I) Medium (6 to 9 feet), above the eye level

Group 5

Buxus sempervirens angustifolia
Cotoneaster salicifolia floccosa
Kalmia latifolia
Pyracantha coccinea lalandi
Rhododendron maximum album
Rhododendron maximum purpureum
Viburnum rhytidophyllum

(II) Large (10 to 25 feet)

Group 6

Ilex opaca
Ilex pedunculosa
Magnolia virginiana (glauca)

(b) Accent plants

Selected plants in Groups 4, 5 and 6

(10) Plants for refined lawn areas

Practically all the plants in the selected lists for Groups 3, 4, 5 and 6 could be used in groups or as specimens for refined lawn areas.

(11) Hedges

(a) Low

Group 2

Calluna vulgaris
Calluna vulgaris nana
Teucrium chamaedrys

Group 3

Berberis buxifolia pygmaea
Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Euonymus fortunei (radicans) *carrierei*
Ilex crenata convexa
Ilex crenata (Kingsville type)

(b) High

Group 4

Berberis julianae
Berberis triacanthophora
Buxus sempervirens Lynn Haven
Euonymus kiautschovica (patens)
Pyracantha coccinea pauciflora

Group 5

Buxus sempervirens angustifolia
Ilex crenata latifolia
Ilex crenata microphylla
Pyracantha coccinea lalandi

Group 6

Ilex opaca
Osmanthus ilicifolius (aquifolium) (S)

(c) Shade enduring

Group 3

Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Euonymus fortunei (radicans) *carrierei*
Ilex crenata convexa
Ilex crenata (Kingsville type)

Group 4

Buxus sempervirens Lynn Haven
Pyracantha coccinea pauciflora

Group 5

Buxus sempervirens angustifolia
Ilex crenata microphylla

Group 6

Ilex opaca

(12) Plants suitable for rock garden planting

Group 2

Arctostaphylos uva-ursi
Calluna vulgaris and varieties
Cotoneaster dammeri radicans
Erica carnea
Euonymus fortunei (radicans) *minima*
Gaultheria procumbens
Gaylussacia brachycera
Mitchella repens
Pachistima canbyi
Potentilla tridentata
Sarcococca hookeriana humilis
Vaccinium vitis-idaea minus

Group 3

Berberis buxifolia pygmaea
Berberis verruculosa
Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Daphne cneorum
Ilex crenata convexa
Ilex crenata (Kingsville type)
Leiophyllum buxifolium
Rhododendron indicum (hybrids)
Rhododendron obtusum amœnum coccinea
Rhododendron obtusum japonicum

Groups 4 and 5

Plants in these groups can be used as background for the rock garden and occasionally therein.

(13) Spreading plants for covering banks and rough places

Group 2

Arctostaphylos uva-ursi
Bignonia capreolata
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) *colorata*
Gaylussacia brachycera
Hedera helix baltica
Mahonia repens
Pachysandra terminalis
Potentilla tridentata
Vinca minor bowles

(14) Plants for growing in urns or tubs

Group 2

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) *colorata*
Hedera helix baltica
Leiophyllum buxifolium prostratum
Pachistima canbyi
Teucrium chamaedrys

Group 3

Berberis buxifolia pygmaea
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Euonymus fortunei (radicans) *carrierei*
Ilex crenata convexa

Group 4

Buxus sempervirens Lynn Haven
Leucothoe catesbaei
Pyracantha coccinea pauciflora

Group 5

Buxus sempervirens angustifolia
Cotoneaster salicifolia floccosa

Group 6

Ilex opaca

(15) Plants for winter porch boxes

Group 2

Euonymus fortunei (radicans)
Euonymus fortunei (radicans) *colorata*
Euonymus fortunei (radicans) *minima*
Hedera helix baltica
Pachistima canbyi
Vinca minor bowles

Group 3

Berberis buxifolia pygmaea
Buxus sempervirens myrtifolia
Euonymus fortunei (radicans) *carrierei*

Group 4 (Small plants)

Berberis triacanthophora
Leucothoe catesbaei

Group 5 (Small plants)

Pyracantha coccinea pauciflora
Buxus sempervirens angustifolia

Group 6

Cotoneaster salicifolia floccosa

(16) Vines to cast light shade

Group 1

Akebia quinata

(17) Vines for climbing on walls or buildings

Group 1

Euonymus fortunei (radicans)

Euonymus fortunei (radicans) *minima*

Euonymus fortunei (radicans) *vegeta*

Hedera helix and varieties

(18) Trees for street and lawn planting

Group 7

All plants in selected and secondary lists where hardy.

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Mandarin Domestica

2-yr. Seedlings	6.00
12 to 15 ins. B. & B.	30.00
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ABIES NORDMANNIANA.

Most of the firs are slow-growing trees, requiring a cool, humid climate for satisfactory growth. Because of this fact, most of them do better in the east and at higher altitudes than they do in the midwest. They are not tolerant to dust and smoke and, consequently, are not adaptable to congested city areas.

Abies nordmanniana, the Nordmann fir, has been one of the best firs for specimen planting in Ohio. In other sections *Abies veitchii* and *Abies cilicica* have been rated as superior to the Nordmann fir.

The Nordmann fir, native of Caucasus, Asia Minor and Greece, develops into a large narrow pyramidal tree. It has dark green foliage, glossy above and with whitish bands beneath. The buds are not resinous, differing in this respect from many of the other firs. Another point of identification is the fact that the needles of the middle rank point forward, densely covering the twig.

It is best to use the Nordmann fir in partially protected situations, as it may suffer some winter injury when given full sun. Moist but well drained soils are to its liking. Propagation is from seeds. Its main use is as a specimen tree. At its best it makes a beautiful plant, holding its branches well to the ground.

L. C. C.

BURLAP CONTROLS.

According to report from Washington, D. C., the O. P. A. has been examining the possibility of revising the burlap ceiling schedule, but it is unlikely that Price Control Administrator Leon Henderson will announce any action until a study has been made of recent deliberations at Delhi, India.

Rising quotations have forced shipment prices in the Calcutta market to a level higher than that permitted for spot sales by the O. P. A. As a result, American importers can only obtain supplies by paying more for goods than the government here will permit them to be sold for.

Representatives of the Indian jute industry, the British government and the government of Bengal met recently at Delhi to discuss the possibility of cooperation with the United States for stabilization of burlap prices.

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" <i>rubrum</i>45	.25
<i>Aesculus octandra</i>25	.70
<i>Aletris fordi</i> , Tung-oli Tree50	1.75
<i>Alnus maritima</i>45	1.50
<i>Ampelopsis quinquefolia</i> , d.b.55	1.85
" <i>tricuspidata</i> , c.s.55	1.85
<i>Aruncaria excelsa</i> , per 100 seeds, \$2.00; per 1000 seeds, \$15.00.		
<i>Aristolochia tomentosa</i>55	1.85
<i>Aronia arbutifolia</i> , d.b.35	1.25
<i>Azalea calendulacea</i> , c.s., 1/2 oz., \$1.00		
" <i>kaempferi</i> , c.s., 1/2 oz., \$1.00		
" <i>mollis</i> , c.s., per oz., \$1.40		
" <i>poukhanensis</i> , c.s., 1/2 oz., \$1.00		
" <i>schlippenbachii</i> , c.s., 1/2 oz., \$1.00		
<i>Berberis thunbergii</i> , c.s.70	2.50
" <i>atropurpurea</i> , c.s.	4.40	16.00
<i>Betula nigra</i> , c.s.50	1.75
<i>Calycanthus floridus</i>50	1.65
<i>Caragana arborea</i>25	.80
<i>Cassaria cunninghamiana</i>	2.75	10.00
" <i>stricta</i> , per oz., \$1.25		
<i>Ceanothus americanus</i>55	1.85
<i>Celastrus scandens</i> , c.s.80	2.75
<i>Cercia canadensis</i>30	.95
<i>Chionanthus virginica</i> , c.s.45	1.50
<i>Chionanthus lutea</i>65	2.25
<i>Clematis paniculata</i> , c.s.85	3.00
<i>Cornus alba</i> , <i>gibberica</i> , d.b.70	2.50
" <i>alternifolia</i> , d.b.50	1.80
" <i>florida</i> , c.s., washed30	.95
" <i>kousa</i> , c.s.80	2.75
<i>Corylus avellana</i>25	.85
<i>Corylus heterophylla</i> , c.s.	1.80	6.50
<i>Crataegus coccinea</i> , c.s.45	1.50
<i>Cupressus arizonica</i>90	3.25
" <i>glabra</i>90	3.25
" <i>macrocarpa</i>85	3.00
<i>Cytisus scoparius</i>85	3.00
<i>Diospyros virginiana</i>25	.70
<i>Elaeagnus angustifolia</i> , d.b.25	.70
" <i>argentea</i> , c.s.35	1.25
<i>Epigaea repens</i> , per 1/2 oz., \$1.25		
<i>Eucalyptus rostrata</i>	1.80	6.50
<i>Fraxinus americana</i>45	1.50
" <i>lanceolata</i>45	1.50
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<i>Paulownia tomentosa</i>70	2.50
<i>Photinia serrulata</i> , d.b.	1.05	3.75
<i>Picea glauca albertiana</i>	3.10	7.50
" <i>Black Hills Spruce</i>	1.25	4.50
" <i>pungens</i> (Colo.)	1.65	6.00
" <i>glauca</i>	1.00	3.50
" <i>sitchensis</i>	1.00	3.50
<i>Pinus albicaulis</i>	3.10	7.50
" <i>banksiana</i>90	3.25
" <i>muricata</i>90	3.25
" <i>murrayana</i>	1.40	5.00
" <i>ponderosa</i> (Colo.)35	1.25
" <i>resinosa</i> (Wash.)35	1.25
" <i>resinosa</i>30	1.00
" <i>rigida</i>65	2.25
" <i>strobus</i>50	1.75
<i>Pistacia chinensis</i>65	2.25
<i>Platanus orientalis</i>35	1.10
<i>Prunus avium</i> , c.s.35	1.10
" <i>cerasifera</i> , c.s.35	1.10
" <i>serotina</i> , c.s.35	1.10
" <i>spinosa</i> , d.b.45	1.60
<i>Pseudotsuga douglasii glauca</i>	1.00	3.50
" (Colo.)85	3.00
<i>Raphiolepis indica</i>85	3.00
<i>Rhododendron cunninghamii</i> , c.s.		
" per 1/2 oz., \$1.00		
" hybrids mixed, c.s., 1/2 oz., \$2.00		
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Charlie Chestnut



Rainy Days Are for Office Work

"For the love of Mike, Chas., quit monkeying around with that nitwit dog," Emil snorted at me. "If you would only put as much effort into the nursery business as you waste trying to learn that old hound tricks, you would be worth your wages."

If the members knew Emil like I do, they would know that an outburst like that from Emil don't mean nothing. After three solid days of rain Emil was getting into one of his fussy moods. He was just looking for something to start an argument. It always makes him mad when he can't think of anything for me to do on rainy days. Since I made a deal with him to work by the week instead of by the day he gets on the war path after about one day of killing time. We was sitting there in the office one morning last May, Emil was reading some farm papers and I was teaching my dog, Butch, a few tricks.

"One time I seen a dog in a show that could balance a milk bottle on his nose, Emil. All you got to do is have patience and keep at it," I says.

"Chas., I am going to go to work and put you up there in the attic and sort out all the stuff up there. Its bad to have all that stuff there in case it should catch fire and burn the office down." He sat there gazing up at the trap door in the ceiling. There is an accumulation of junk and old records up there covered with dust and eaten up by the mice that don't amount to a hoot, any of it.

"Maybe if I started Butch off with a pop bottle, he would catch on how to balance that and then he could work up to milk bottles later," I says to Emil. "They had a dog at the carnival one time in Lake Park that could tell the time of day, Emil. I might take a notion to learn my dog that trick."

Emil was reading the Rural New Yorker again, so he didn't pay any attention. I could see he was reading up on how to make money raising turkeys. I was expecting him to go off on a wild idea on a turkey ranch, but I guess he wasn't in the mood as he didn't say anything, but turned over the page to an article on how to make jelly.

"There was a beagle hound a fel-

low had down to the garage last winter that had a good trick, Emil. That dog could go to work and turn a summersault end over end. Never seen it done before. That dog picked it up himself the man said."

"Here Butch, lets see if you can turn a summersault," I says to the dog and I started to give him a few ideas to start on. That trick didn't turn out good. I forgot to tell the members that my dog is a big red setter, just a little smaller than a shetland pony. First time over and he upset the cuspidor right by Emil's chair.

"Get that clumsy ox out of here, Chas., before I crown him with a chair. Get this mess cleaned up Chas. This here is supposed to be a office and not no circus ring."

"That garboon was overdue for emptying anyway, Emil," I says, "there aint no harm done that a little hand work with the mop wouldnt fix up."

"While you are at it Chas. you might as well go ahead and mop the whole office, you aint mopped out since last summer. It wouldnt do no harm to wash the windows too, then we can see whats going on in the outside world."

"What about that pile of hunting

boots and rubbers and junk there behind the door? Shall I throw that all out or shall I work around it, Emil?" I says. "And how about them trade papers and catalogs there beside the desk, shall I throw them out or are you saving them for the Salvation Army," I says.

Emil roused up from his chair and went over to the pile of winter clothes partly thrown on a chair, but mostly on the floor.

He picked up a pair of felt boots and held them up to the light. "Chas., Chas., look here. Look what that half wit dog done. He chewed a hole right thru one of my best felt boots. Look, he ruined it."

"Take it easy, Emil," I says. "If the dog chewed it, he only done his duty as he seen it. Probably he thought it was a rat's nest. Anyway them felt boots is so old they have turned white with old age. I'll bet them boots is 15 years old. Look here at the label Emil. Pat. Aug. 12, 1916. I think Butch done you a favor. Only he should have chewed both of them." With that remark I went over to the greenhouse to get a pail and the mop.

When I got back, there was Emil dusting off all the old junk in that pile. He come up with his coon skin cap, all covered with dust and wadded up in a ball. "Well look here Chas.," he says, "here is my rabbit hunting cap. I thought somebody had stole it sure. I couldn't find it all winter. Lets see, I remember

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having it Thanksgiving Day but I never seen it after that." He stood there with the hat in his hand trying to remember how it got there behind the door.

"Chas.," he says, "Its that dam dog again. I'll bet he took it and dragged it there. I dont know how I put up with that hound raising the devil with everything around here."

"Well you know how a dog's instinct is, Emil. Maybe he thought it was a dead woodchuck and ought to be buried. Maybe he thought it would come in handy for a rainy day. You know how dogs bury stuff, Emil."

"Nothing would give me greater pleasure than to bury that big red brute himself. He aint no good for anything except to balance a pop bottle on his nose and what earthly good is that?"

"Butch is as fine a watch dog as you ever seen in your life, Emil. Remember the time he chased that tramp out of the horse barn? You said yourself he done a good job that time," I says.

"Yes, but dont forget how he chased Mr. Morse off the place last summer when Mr. Morse come up here special to get me to trim his elms. What about that time? Chasing customers away! The trouble is, he dont know the tramps from the customers. Honestly Chas. I dont know how I put up with it."

I started to mop over by the back door. "What about these two spades with broken handles here, Emil? Whats the use of saving them? They been here since last fall."

"Leave them right there, Chas. I'm just waiting for that salesman to show up. When I bought them spades he told me them spades couldnt be broken. Never heard of one breaking in his life he said. I'm just waiting for him to show up."

"Dont worry he wont ever show up. They placed the account for collection and probably wont never figure to get stuck again. Out they go," I says.

I worked on over toward the file in the corner. "Give me a hand here Emil while I move out this file," I says. Emil give a couple of groans and out she come. A whole double armful of stuff spilled out on the floor, stuff that had fallen down behind during the past five or six years. I shook the dirt off a few

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things. "Look here Emil, here is a letter from the Ill. Nurs. Assn. Never been opened. Lets see what it is." We opened it and I read it to Emil. "Dear Emil," it read. "You have been appointed a delegate to the National Convention this summer in Portland. Please send your reply promptly if you will accept the appointment."

"Holy mackerel, Chas., they did write the letter after all. When they told me about that afterward I thought they was only giving me the run around. What do you know about that, Chas., I could have gone to Portland if that letter hadnt been lost. Lets see what else there is here Chas."

He started kicking around in the rubbish. "Hey, quit stirring up the dust Emil," I says, "There wont nothing get away except a few spiders."

"Heres that order from Mrs. Brewster, Emil. The one for the Lombardys that she finally bought from Jake. She said she mailed an order but you never believed her."

Emil give a look out of the corner of his eye at Butch. Butch was stretched out snoring on the floor. "Listen Emil", I says, "if you are trying to suggest that Butch done that you are crazy in the head. Thats one thing he dont do. He dont monkey with letters. Probably you laid them letters there yourself and the wind blew them down in back of the file."

"You better leave the files out from the wall a couple of feet, Chas. We have enough trouble without hiding the mail besides."

"Heres that old garbage burner of yours Emil, the one with the silver band around the bowl. Looks like it would be good for a few more rounds." Emil grabbed it and went over to his desk to clean up that old pipe. In a few minutes he had it going with a full load of cigar clip-pings.

"Chas.," he says, "this here was always my favorite pipe. I aint seen it for at least three years. Look around some more there Chas. Maybe you can run onto that stillson wrench we lost last spring."

"No, thats about all there is to this cache, Emil, except some old catalogs and a couple of bills," I says.

"What about this old book case here Emil? There aint nothing in it that amounts to a dam. Look it here

Emil, just a lot of old books and bulletins that is out of date and most of it no good in the first place. Why not throw the whole thing out, Emil?"

"There you go again Chas., talking about throwing stuff out again. Thats my library. Every nursery has a library. Some of them books is good reference books."

I pulled out a few books and read over the titles. "What will you ever do with this one Emil? Proceedings of the Prairie State Horticultural Soc. 1897. Its all full of reports of the number of apples harvested in Calhoun County for the period beginning 1870. Here is a snappy report on how to dig a cellar to store pears and how to tie up rhubarb for the market."

"Then here is a government bulletin on how to make a farm woodlot of catalpa. That racket died out 40 years ago Emil. Aint no use to save that." He didnt say anything so I threw it into the woodbox.

I sat down in the chair, lit my pipe and started in to go over the book case. It looked to me like a soft job for a couple of hours. "Botany of the Ocean Depths." "Emil where in hell did this come from. Thats a far cry from the nursery business here in Riverbend." "Merry Christmas from Uncle Julius," it says.

"Lets see that book Chas. I remember Mrs. Brewster gave me that after Henry died. She said I ought to have it as I was a botanist. Might as well throw it out Chas. I aint likely to be prowling around the bottom of the ocean."

"Here's a snappy number Emil. "Flora of the Mispa Mountains" by Prof. Asparin. The pages aint never been cut and its older than I am. What about this govt. bulletin on "Common Diseases of Mules". We aint got a mule on the place and never will."

"Dont throw that out Chas. I might take a notion to get a team of mules. One of the members from Texas told me at the convention that mules has got horses beat 4 ways for working in the nursery. Only thing he says was to get a good mule driver. Cant everybody drive a mule, he claimed. Nobody born north of the Mason-Dixon line has got a vocabulary that will make a mule operate. Save that bulletin, Chas. I might get a chance to make a trade for a mule."

"Here is an important paper on how to thin out a forest of Loblolly Pine. Better save that Emil. Maybe we can get some ideas on how to work over that block of Scotch Pine, there by the railroad track, so we can put in a saw mill sometime."

Emil was losing interest in the books, so I just tossed most of what there was into the wood box and left a half dozen, just so we could say we had a library. "I got a good notion to write up a article for the paper on "Glimpses into the Nurserymens Library" or something like that. There ought to be some good pointers for the members, if I would go to work on it."

"Cut out the idle talk Chas. and get on with the mopping," says Emil. "Get that cuspidor cleaned out before some customer comes in."

"Aint we going to go over that pile of magazines there in the corner Emil?" I says. "Cant tell what might turn up there. We aint run onto that cross cut saw any place yet."

But Emil was gone. Rain or no rain, out he went. I guess Emil just aint cut out for office work. He's the outdoor type.

THE sixteenth annual meeting of the New Jersey Federation of Shade Tree Commissions will be held at the Roger Smith hotel, New Brunswick, November 17.

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Chionanthus virginica, white fringe		
6 to 12 ins., s.	8.00	60.00
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4 to 6 ins., s.	1.25	10.00
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REVISE REGULATIONS.

The sixth revision of B. E. P. Q. 386, effective October 10, adds to the list of articles exempted from certification requirements under the federal gypsy moth and brown-tail moth quarantine regulations. The chief items added are cuttings and branches of boxwood, eucalyptus and California pepper tree for ornamental use, and cuttings of greenhouse-grown woody plants when so labeled.

Revision of B. E. P. Q. 496 comprises seven mimeographed pages containing suggestions for construction of plunging and growing beds and their maintenance under beetle-free conditions in accordance with regulations of the white-fringed beetle quarantine.

PRICE CONSPIRACY.

The federal trade commission announced that it had ordered the Power & Gang Mower Manufacturers' Association, Chicago, and six corporations "to cease and desist from a price maintenance combination or conspiracy held to be in restraint of trade."

The commission named as respondent companies Coldwell Lawn Mower Co., Newburgh, N. Y.; Jacobsen Mfg. Co., Racine, Wis.; Moto-Mower Co., Detroit; Toro Mfg. Corp., Minneapolis; Ideal Power Lawn Mower Co., Lansing, Mich., and Eclipse Lawn Mower Co., Prophetstown, Ill.

THE street address of the Hyattsville Nursery Co. is now 5601 Fortieth avenue, Hyattsville, Md., instead of 28 Oakwood road, because all of the streets in that city have been renamed.

THE firm of Coles-Righter Co., landscape engineers and contractors, 298 South Easton road, Glenside, Pa., has been formed by O. Hammond Coles, a graduate of Swarthmore College who spent some time at Cornell University taking up landscape work, and C. Arthur Righter, a graduate landscape architect of Pennsylvania State College. Both men were connected with a large landscape firm in the state for the past ten or twelve years. They also operate Laurel Crest Nurseries, Woodstown, N. J., and Scotch Acres Nursery, Mullica Hill, N. J.



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Excerpts from a Plantsman's Notebook

By C. W. Wood

Lavenders.

(September 5, 1941.) Unfortunately for us of the north, we cannot enjoy many lavenders. After many trials I have a few forms of *Lavandula vera* and *L. Spica* (the first the true lavender, while the other is known as spike, though there is not enough difference between the two to interest gardeners) which are able to go through our winters without protection. Yet the genus contains others of value to gardeners in warmer sections.

Of the latter, *Lavandula Stoechas* seems to be the only one that has made much headway in American nurseries. It is a pretty gray-leaved shrub, growing up to two feet in height, with spikes of dark purple flowers, the spike terminating in a tuft of purple bracts. Another species, *L. dentata*, has the same character—a tuft of colored bracts at the top of the spike. In the latter case, the flowers are a rather pale violet in plants I have grown from seeds, instead of the deep purple mentioned by Bailey, and the leaves are dentate, as the specific name indicates. Neither is hardy here in northern Michigan, though they do well in pots.

Two other species, *L. lanata* and *L. multifida*, have appeared in American lists, though they are seldom seen. I have never grown either and so can say nothing about them from experience. The first is said to grow a foot tall and to be especially attractive because of its densely woolly leaves. The other, which I have seen in two or three gardens as pot plants, is a pretty plant, with finely cut, woolly leaves and violet-colored flowers in dense spikes. I suspect, though, that these three species will appeal most to herb collectors, leaving the two named in the first paragraph of most value to commercial growers.

As might be expected in a plant so long in gardens, there are many forms of ordinary lavender, whether it be *L. Spica* or *L. vera* (there seems to have been no distinction made between the two by botanists until the early nineteenth century, when de Candolle created the latter spe-

More comments on the usefulness, propagation and culture of less common herbaceous perennials that are of interest particularly to the neighborhood grower, tested and studied in recent seasons in the writer's nursery in northern Michigan.

cies). There are tall forms, known generally as *L. Spica gigantea*, which grow up to four feet or more in height under good culture, and there are dwarf ones of no more than an 8-inch stature, the one known as *L. nana atropurpurea*, or French lavender, being one example. Many named varieties, including the Bowles and Munstead dwarfs, are mentioned in literature and there are also several white-flowered forms. Of the latter, one growing no more than four inches tall would be an intriguing plant and a useful one, if it were permanent. Unfortunately, all the whites that I have grown have been short-lived, even when handled carefully under glass.

If you have calls for lavender, it would likely pay you to watch European lists for seeds of the kinds little known in this country. They would not come true, of course, but you would, if your experience coincided with mine, get many interesting breaks, some of which would be worth growing from cuttings. And cuttings of year-old wood taken with a heel in early spring root with ease.

Linum.

(September 10, 1941.) When one stops to think that close to 100

species of *linum* are known to botanists and compares that imposing number with the few known to gardeners, it becomes apparent that we have far to go before we corral all the beauty of that genus. It may be that some may think we have all the good ones available now in the half dozen or so which are listed by American nurserymen. But that can scarcely be true, for we read of two or three kinds as being the best of the lot which are not, so far as I know, available in either American or European seed establishments. Who in this country, for instance, has ever seen *L. aretioides*? This, Farrer says, "is perhaps the most to be desired of all. It is a quite small mass of leafage, narrow, fine, frail and huddled, so that the whole looks exactly like a cushion of *Douglasia Vitaliana*; in which, however, sit stemless the flaming cups of gold, each by itself as the similar cushions of *Geranium nivalis*."

There are, however, contrary to what one might think after looking in most nursery lists, several good flaxes available to all who will do a little searching. There is *L. perenne*, of course, which needs no introduction, for it is known to all gardeners. On the same order, we have *L. narbonneuse*, spoken of as being taller than *L. perenne*, though it seldom is in specimens that I have seen. It is also said to be bluer, a character which does not always hold true. The flowers are larger, however, and that is much in its favor. Once I had its variety *gentianoides*, a beautiful plant, even more floriferous and longer-blooming than the

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type, normally a little lower in stature (seldom over a foot) and distinctive in its funnel-shaped flowers. Like all blue linums that I know, including the dwarf alpinum and the semi-dwarf austriacum, this plant is rather short-lived, requiring sowing every year or two to keep up a supply.

The last two are, to me, the most entrancing of the blue-flowered kinds. They apparently have the same appeal to other gardeners, too, for they are the ones that attract most attention and most buyers, in my experience. To the casual observer, they are quite the same, though more careful examination will reveal several differentiating characters of leaf and flower and a difference in height, alpinum seldom exceeding six inches, while the other is usually almost twice that. The flower stems of austriacum are more or less erect, giving it an intriguing stiff effect, while those of alpinum arch over to touch the ground or are almost procumbent.

The name tenuifolium seems to be imperfectly understood in nurseries, being used to cover L. salsoloides and its variety nanum by some, a foot-tall violet-flowered plant by others, and once I got what looked like a narrow-leaved form of L. perenne under that name. According to Correvon, it is a southern European plant with mauve flowers on 10-inch stems, produced from June until October. Several years ago I had seeds from him, which gave me a few tender or short-lived plants which corresponded with the second one mentioned at the beginning of this paragraph. It was a lovely plant, blooming the first year from seeds, that would no doubt become popular if it were generally available.

Other blue-flowered kinds grown here during past years include the native L. Lewisii, the American representative of L. perenne and not quite so good as that species; L. colinum, on the order of L. alpinum, though not so hardy, according to my experience; L. Julicum, on the order of alpinum, with flowers a paler blue and a shorter (June and July) blooming period, and L. montanum, which seems to be little more than a large alpinum. Others are mentioned in the literature, some with enthusiasm for their beauty, and would no doubt be acceptable additions to our blue-flowered plants.

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flaxes for the north that I have grown is *L. salsoloides* and its variety *nanum*, the first a foot-tall plant with whitish flowers, shading to blue in the center, and the other with opalescent saucers over a furry mat. They both bloom a long time, commencing in early summer, and are easy to grow in a well drained soil in sun. The foregoing corresponds with what some, perhaps all, botanists call *L. salsoloides*, but there is a pink-flowered plant in European lists under the same name that is a desirable subject. I have had it from two different sources, but failed to keep it long. Although not for the north, the New Zealander, *L. monogynum*, would make an entrancing subject for more temperate climates, where its graceful, 12-inch bushes, covered with pure white flax flowers for close to two months in midsummer, would add charm to the sunny garden. Tender here also is the eastern Mediterranean, *L. leucanthum*. It has pure white flowers on 6-inch to 8-inch stems, at the same time as the next preceding.

The yellow-flowered species are quite different, entirely aside from their flower color, from the ones mentioned before, lacking some of the airy grace of the others, yet having a certain charm in their more sturdy appearance; nor do they belie their looks, for they are mostly fairly long-lived in the poor light soil in which all flaxes delight. It should be remembered, though, that any flax is likely to become discouraged after two or three years' efforts; so it is best to be prepared for that emergency by having replacements coming along at all times.

It may be true, as Farrer said and as some botanists tell us, that *L. campanulatum* cannot be separated from *L. flavum*. Nevertheless, there is a plant in commerce (I have had it several times from European seedsmen) as *L. campanulatum* that is much superior to ordinary *L. flavum*—better not only in size of flower heads and in its yellow color, but also in its constitution. Neither is completely hardy here, or they are short-lived. *Campanulatum* is, however, more to be depended upon. It grows about a foot tall and blooms in early summer, sometimes sparingly until autumn. There is a dwarf form of *flavum*, known as variety *compactum*, which is, in its 6-inch stature, a good rock garden ornament. The Asiatic,

L. sulphureum, is less effective, because of its pale color, than any of the foregoing. It also proved short-lived here. Two or three other yellow ones from the Orient, including *L. iberidifolium* and *L. orientale*, are well spoken of in literature, but I can say nothing about them from experience.

There are two flaxes, *L. hirsutum* and *L. viscosum*, that have strayed away from the blue, yellow or white of the general run of the genus, assuming a reddish purple in the first, and a rosy purple or violet in the other. Both are desirable plants, quite out of the ordinary as flaxes go, and would no doubt sell well in the neighborhood nursery. *Hirsutum* grows about a foot tall and blooms here in June and part of July. There is a discrepancy, however, between the books and the plants that I have grown as *L. viscosum*. Farrer tells us it has "a stalwart and quite unflaxlike effectiveness," and Correvon gives its height as ten inches; here it never grew over six inches tall. Its flowers are large for so small a plant, and they are a pleasing shade of rose purple or rosy violet, a shade difficult to describe. Although it is said to come from southern Europe, it proved quite hardy here, but it is not easy to transplant when large. Grow these flaxes from seeds.

Two Tall Catchflies.

(August 18, 1939.) Catchflies are apt to be either weedy, inconspicuous or of annual duration, or all three. The Chinese *Silene Fortunei*

answers to none of these descriptions. In the first place, it is a long-lasting perennial of sturdy constitution, taking on size through the years and, as its crown increases in size, it adds a few more of its 2-foot flowering stems to its display. And each stem carries clusters of rose-colored or white flowers with petals deeply cut. Nearly everything about the plant, including a summer-long blooming period, is pleasing to gardeners who are looking for plants that can take care of themselves and still put on a show year after year. *Fortunei* can do that, if it is given a place in full sun or light shade and a soil that is not always wet.

It is unfortunate that many gardeners have the impression that *S. Asterias* is an annual. It may be that some of its forms act like an annual, though none that I have grown has done so. There must, however, be something back of the statements in garden literature (both Farrer and

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Correvon, for instance) that it is an annual. Be that as it may, a sowing of seeds from any source that I know will yield long-lived plants. For garden use, *S. Asterias grandiflora*, equally long-lived and more showy in its larger balls of scarlet flowers in late spring and early summer, is to be preferred, and I venture to say that a showing of this plant in the nursery will result in the fact that gardeners will prefer it to many other things of its season. The 2-foot to 3-foot stems rise from low rosettes. Both are easily grown from seeds, the first one at least blooming the first year.

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Diseases of Trees

Gleanings from the Latest Reports of Scientific Research

By Leo R. Tehon

BROWN ROT IN WESTERN WASHINGTON.

Because of the damage which results from the brown rot disease of stone fruit trees in the Pacific northwest (see the American Nurseryman for September 1, 1941, for a summary of brown rots in Oregon), investigations of these diseases have been under way at the Washington experiment station since the spring of 1937. Results, just presented by Glenn A. Huber and Karl Baur, indicate that two such diseases are prevalent in western Washington and that each is responsible for characteristic damage to various kinds of stone fruits.

The studies undertaken extended to Italian prune, apricot, sweet and sour cherry varieties and peach. The two brown rot diseases were the western brown rot, caused by a fungus known as *Sclerotinia laxa*, and the common American brown rot caused by *Sclerotinia fructicola*. In general, for all the stone fruits considered, the American brown rot was most frequently responsible for the rotting of ripe or mature fruit, the western brown rot for the blighting of blossoms and twigs, the production of cankers and the formation of mummied fruit.

On the apricot, which is naturally highly susceptible to brown rot damage, the western brown rot is responsible for infections resulting in twig and blossom blight and cankers; this rot also occasionally attacked the fruit and caused the production of brown rot mummies. The American brown rot, on the other hand, was associated only with rot of ripe fruit and seemed less important in this respect than the western brown rot.

Among cherries the English Morello and Early Richmond appear to be more susceptible to brown rot infection than Montmorency, and on the former two varieties many of the 1-year and 2-year-old twigs are killed in some years. Yet on the Montmorency fruit spurs are killed to the extent of as much as thirty-one per cent. This type of damage is due

chiefly to the western brown rot fungus. Fruit and blossom rots were due to both types of brown rot.

On the peach, the western brown rot was responsible for twig and blossom blight, for cankers, for fruit rot and for the development of mummies, while the American brown rot produced only fruit rot and mummies. As a cause of fruit rot, the American brown rot was about twice as important as the western brown rot, but in the production of mummies the western brown rot was about fifteen times as important as the American brown rot.

On Italian prune, the brown rots are more important and destructive

to the commercial crops than on the other stone fruits of the region. This is perhaps attributable to the attack by American brown rot on the blossoms, though it is not clear that what apparently is a brown rot infection of the blossoms is actually responsible for their blighting and for failure of the fruit to set. A peculiarity of the prune, the production of "shedders," or fruits that fail to develop further after reaching half size or larger, does appear to be due to a large extent to American brown rot, some 285 such fruits among 561 examined having yielded the American brown rot fungus. Rotting of ripe fruit is due almost exclusively to American brown rot, and only an occasional instance of fruit rot due to western brown rot has been noted. Where twig blight is found on Italian prune, it may be due mostly to the western brown rot, but can also be caused by the American brown rot. However, one important point is that in prune

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orchards only American brown rot is to be found, unless there are apricot, peach or cherry trees included in the planting, which can serve as sources of western brown rot infection.

L. R. T.

DIEBACK OF HOLLY.

A previously unobserved and undescribed dieback disease of the American holly, *Ilex opaca*, has been reported by Dr. Thomas R. Bender, of the New Jersey agricultural experiment station. This disease attacks the twigs and branches of the tree and can cause considerable damage, although it seldom kills the tree. It is important chiefly because, through the injury it does, it can disfigure a tree to such an extent as to lessen greatly its ornamental value.

The outstanding and most easily noted symptom of the disease is the flagging to be seen on older branches when they become affected. This consists of a withering and browning of the leaves so conspicuous as to make the affected branches show in strong contrast with the dark green foliage of the healthy branches. It occurs chiefly in the lower portion, or near the base, of the crown of the tree. It may appear at any time during the growing season.

Another characteristic symptom is the wilting of current season's growth. This frequently is followed by complete defoliation of the affected twigs, which then in their bare, dried, curved-over condition are easily observed, even from some distance. This symptom, in contrast with flagging, occurs more abundantly on the terminal shoots in the top and upper part of the crown. It can, however, appear in any part of the crown.

Wilting of current season's growth occurs in late May and early June, when the twigs have reached a length of eight or ten inches and at about the time the tree is in full bloom. It starts at the tip of the twig and works rapidly downward, blackening the leaves and causing the twig to appear as if it had been killed by frost. An infected twig, cut lengthwise, shows a brown discoloration of the inner part of the bark and of the pith, and this is accompanied later by a general breaking down of the pith itself. However, the small ring of wood seems not to be affected and is not discolored.

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Liners for fall and spring.

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attack of a fungus known technically as *Fusarium solani* variety *martii*. This fungus was constantly obtained from diseased material in laboratory tests and has been inoculated into healthy twigs and branches with successful reproduction of the disease. From experiment and observation, it seems that the fungus can gain entrance in a variety of ways. It can penetrate through healthy, uninjured leaves, if they are quite young; it can enter through wounds in both young and old stems, and it seems able to enter through the tip parts of twigs of the current year. It may also enter through blossoms, and then insects may be important as carriers.

Up to the present time, this holly dieback is not known to be widely distributed. It is, in fact, known only in the vicinity of Spring Lake, N. J., where, on one estate, trees making up an extensive boundary planting have become infected. It is said to have first appeared in 1935 and has since spread to all parts of the planting. Since holly is, as a rule, exceptionally free of diseases and pests, the occurrence of this disease may be sporadic, but the general increase of tree diseases that has been taking place would justify careful watch for this disease and the taking of steps, when it is found, to prevent its spread and increase.

As with all new diseases, the first steps in control involve sanitation practices. All infected branches, and all leaves falling from such branches, should be completely removed and burned as soon as the disease is discovered. Also, as rapidly as newly diseased branches and twigs become evident, they should be removed and burned. This is the most practical way of eliminating continuous re-infection. It has been observed that many infections start near wounds made by lawn mowers and pruning tools and where wind breakage occurred; consequently, general use of an antiseptic wound dressing is advisable. To what extent fungicidal sprays such as Bordeaux mixture and wettable sulphurs would give protection is still unknown. L. R. T.

THE California Nursery Co. last month opened its new sales branch at Stockton boulevard and Colonial way, Sacramento, Cal. It replaces the one formerly at Folsom and Alhambra boulevards in that city.

New Books and Bulletins

TABULAR KEYS.

"Tabular Keys for the Identification of the Woody Plants," just published by the Gerrard Press, at \$2.50, is a book of 160 pages, 8½x11 inches, bound in a plastic spiral binding. It was compiled and arranged by Florence B. Robinson, assistant professor in landscape architecture at the University of Illinois, whose book on "Planting Design" was published not long since. She is also well known for the card file describing "Useful Trees and Shrubs." The tabular keys include the 500 trees, shrubs, vines, conifers and broad-leaved evergreens described in that card file.

The author evolved this set of tabular keys for the use of students and others interested in the woody plants most used in the northern states and Canada, for study and for identification in the field. For that use its simplicity for quick reference and comparison commends the work.

BOOK THAT WON AWARD.

Frank K. Balthis, horticulturist at the Garfield park conservatory, Chicago, won the recent award of \$1,000 offered by the Macmillan Co. for the best manuscript for a garden book. That he well merited the prize is apparent now that the volume has come from the publisher. "Plants in the Home" should help many housewives to have more beautiful and thriving plants in their domestic quarters.

The book reveals a knowledge of the problems that arise with house plants, which the author says is the

result of numerous inquiries from the public. It also shows a broad horticultural knowledge, which was to be expected of the author, who has grown all sorts of plants in the conservatory which is the largest under one roof in the world. Not only does he give instruction about the culture of the usual plants, but he makes suggestions as to other subjects, not only to enlarge the list of house plants, but to include some novelties and curiosities.

Sixteen pages of sketches by Tabea Hofmann illustrate the book. It is printed in large type, on pages 7½x10½ inches. Attractively bound and selling at \$2.50, it should be a popular Christmas gift, as well as an unexcelled book of reference on the subject it covers.

"COMMERCIAL FERTILIZERS."

Growers who wish to widen their knowledge of fertilizers and the part they play in promoting the growth of plants will find it profitable to read the book "Commercial Fertilizers," the third edition of which has just been published. This book makes available a text that incorporates the many important findings in this field since the second edition was issued by the same publisher, the Blakiston Co., in 1938.

Specifically, the author, Gilbeart H. Collings, professor of soils at Clemson Agricultural College, Clemson, S. C., in his preface to the new volume, refers to the rapid expansion of knowledge concerning the essential nutrient elements taken from the soil other than nitrogen, phosphorus and

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Large stock of Evergreens up to 5 to 6 ft.
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potassium. This has led to his adoption of a new classification of these elements into two groups—the secondary and the rarer—for study presentation.

The author has also included in this 480-page edition results of much of the research data that have become available during the past three years concerning the proper use of individual fertilizer materials and concerning the detection of nutrient deficiencies in plants and soils.

The book is clothbound, well illustrated and thoroughly indexed. It sells for \$4.50 per copy.

BULLETINS RECEIVED.

"Nursery Practice for Trees and Shrubs Suitable for Planting on the Prairie-Plains" is a book of 160 pages by H. E. Engstrom, associate forester, prairie states forestry project, and J. H. Stoeckler, associate silviculturist, lake states forest experiment station, recently published by the United States Forest Service. Since planting of trees and shrubs is now one of the largest activities of the Forest Service in the prairie-plains region, and one in which the Soil Conservation Service and other public agencies are making large contributions as well, the purpose of this textbook or guide is apparent. It covers many problems which also confront commercial nurserymen in the region; it will doubtless be of use to some of them, also. Details about collecting and handling seeds, ground preparation and seed sowing, germination and seedling culture, lifting and field grading, winter storage and shipping, seedling protection, water supply and other subjects are well covered. Illustrations showing equipment and methods are numerous. Copies may be obtained by remitting 25 cents to the Superintendent of Documents, Washington, D. C.

"Fertilizers for Utah Soils," by D. W. Pittman and D. W. Thorne, circular 116, issued by the Utah agricultural experiment station, Logan, lists the elements required for plant growth and tells of the value of fertilizers and their application. Also given in the 20-page booklet is a general guide to the selection and use of fertilizers.

"Control of Chlorosis in American Grapes," by F. B. Wann, a 28-page pamphlet issued as bulletin 299 by the Utah agricultural experiment

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NATIVE EVERGREENS, COLLECTED

Per 100
Ilex Opaca, American Holly..... 4.00
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9 to 12 ins., seedlings..... 8.00
Juniperus Virginiana, Red Cedar..... 3.00
3 to 6 ins., seedlings..... 5.00
6 to 9 ins., seedlings..... 7.00
9 to 12 ins., seedlings..... 10.00
12 to 18 ins., seedlings..... 10.00
Kalmia Latifolia, Mountain Laurel..... 5.00
4 to 6 ins., seedlings..... 7.00
6 to 12 ins., seedlings..... 13.00
Pinus Virginiana, Scrub Pine..... 4.00
6 to 12 ins., seedlings..... 6.00
12 to 18 ins., seedlings..... 6.00
Taxus Canadensis, Hemlock..... 5.00
3 to 4 ins., seedlings..... 7.00
4 to 6 ins., seedlings..... 10.00
6 to 12 ins., seedlings..... 15.00
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Hall's Jap. Honeysuckle, 6 to 12 ins. \$ 3.00
Hall's Jap. Honeysuckle, 12 to 18 ins. 6.00
Vince Minor, light lining-out..... 3.00
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Cornus Florida, 3 to 4 ft., 50c; 4 to 5 ft., 75c; 5 to 6 ft., \$1.00.

Cornus florida rubra, 3 to 3 ft., 80c; 3 to 4 ft., \$1.00; 4 to 5 ft., \$1.50; 5 to 6 ft., \$2.00.

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If wanted NR, 10% less.

Red-leaved Barberry, 15 to 18 ins., 12c;

18 to 24 ins., 15c.

Green-leaved Barberry, 15 to 18 ins., 10c;

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GOLDFLAME

Best Everblooming Plant

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When in the market for Tree Seedlings and Shrubs, such as *Rhus copallina*, *Rhus glabra*, *Rhus typhina*, *Rhus canadensis*, *Rosa*, *Azalea*, *Oaks*, *Robinia*, *Black Locust*, and *Tulip Tree*, write us for special quotations on your requirements.

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STRONG TRANSPLANTED LINERS

4 to 6 ins., LATH HOUSE GROWN

(Supply very limited)

\$7.00 Per 100 \$60.00 Per 1000

J. B. BEALLE, Greenwood, Miss.

station, Logan, describes the control of chlorosis by iron treatments, the testing of varieties for chlorosis resistance and the effects of grafting Concord and other labrusca varieties on chlorosis-resistant stock.

"Lawn Weeds and Their Control," by D. C. Tingey and Bassett McGuire, circular 117 of the Utah agricultural experiment station, gives in sixteen pages the methods of weed control by better lawn management, as well as other methods of control. Described and illustrated are the more troublesome lawn weeds.

The 1940 report of the Florida agricultural experiment station, Gainesville, a 100-page booklet briefly describing the activities at the experiment station for the year ending June 30, 1940, contains several reports of interest to nurserymen, such as the sections on citrus fruit culture and gardening. Listed also are the publications issued by the station during the year.

Plant quarantine restrictions of the Dominion of Canada are contained in a 10-page mimeographed bulletin, B.E.P.Q. 514, dated May 12, issued by the bureau of entomology and plant quarantine of the United States Department of Agriculture, Washington, D. C.

"Diseases of Field Crops," by Ralph E. Smith, professor of plant pathology, issued as circular 121 of the California agricultural extension services, Berkeley, covers in eighty pages various troubles that affect field crops in California, together with means of their control.

"Diseases of Fruits and Nuts," circular 120 of the California agricultural extension service, Berkeley, written by Ralph E. Smith, professor of plant pathology and plant pathologist in the state experiment station, covers the subject thoroughly in 168 pages, including many illustrations. By crops, the diseases are described in their effect on the plant, and control measures are given. Separate treatment is given to diseases affecting many crops. Concluding are comments on fungicides and other chemicals used in the control of plant diseases.

"Plot Tests with Chemical Soil Sterilants in California," by A. S. Crafts, H. D. Bruce and R. N. Raynor, issued as bulletin 648 by the California agricultural experiment station, Berkeley, reports in a 28-page

pamphlet observations on soil sterilization from over 1,200 plots on thirteen different soils. The analysis shows the typical herbicidal behavior of sodium arsenite, arsenic trioxide, sodium chlorate, ammonium thiocyanate, borax and colemanite. Such weed killers are used to keep clean irrigation ditches, fire breaks, fences, roadsides and areas around camp grounds, electric substations, irrigation structures or telephone poles. They are practical also in eradicating noxious perennials on pastures, ranges and cultivated fields.

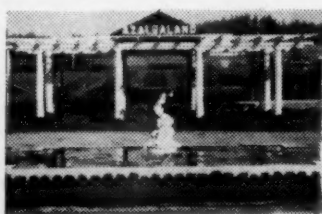
WASHINGTON NOTES.

Dr. Glenn A. Huber has been appointed assistant superintendent of the western Washington experiment station, at Puyallup.

L. N. Roberson, Seattle, has erected a steel greenhouse for Dr. Nicholls and one for S. L. Savage, Seattle; also installed heating tables on all benches and provided a circulating air heater for Sunrise Florist, Auburn.

A. S. Hill Nursery, Richmond Beach, has completed planting 3,000,000 tulips.

Frank Chervenka, Sumner, recently purchased twenty-three addi-



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AZALEA MOLLIS

Outside grown, once transplanted, out of flats.

6 to 8 inches.....\$ 5.00 per 100

12 to 16 inches, many

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Cash with order; no order for less than 50 plants.

Free packing and shipping in U. S.

Headquarters for . . .

Fruit and Shade trees with vigorous

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Flowering trees, Weeping trees.

Shrubs, Roses, Small fruits.

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ROSEBUSHES

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tional acres adjoining his bulb tract at Watsonville, Cal. A. B. Miller, American Bulb Co., Chicago, guest of Mr. Chervenka, caught four large Puget sound salmon, which were shipped to friends.

J. W. Adams, Richmond Nurseries, spent a week in and about Portland.

D. J. O'Donnell, state inspector, and Dr. Glenn A. Huber and Chet Gould, of the western Washington experiment station, Puyallup, attended the Oregon nurserymen's meeting.

The Broadway Edison evening school is offering classes for training gardeners who are working at the trade. The work is to be carried on at the University of Washington arboretum greenhouse and is to consist in part of classroom instruction and in part of practical work in the greenhouse.

R. P. White, A. A. N. executive secretary, visited the Washington state nurserymen on his trip to the coast last month.

A survey for available nursery stock is being made for government purposes. W. L. Fulmer.

PLAN SEATTLE SHOW.

The notable success of the twenty-second national flower and garden show, at Seattle, Wash., last spring, is reflected in announcement that a show on a comparably lavish scale, with the theme, "Court of American Gardens," will be held in that city March 15 to 22, 1942. It will be sponsored and financed jointly by the Allied Florists' Association of Seattle and the national flower show committee of the Society of American Florists. The general chairman is Dr. John H. Hanley, director of the University of Washington arboretum. It will be staged, as was last spring's exhibition, in Seattle's civic auditorium.

MEET AT SACRAMENTO, CAL.

At the meeting of the Superior California Nurserymen's Association, at Sacramento October 8, Frank Tuttle gave a talk on the high lights of the recent state convention. Louis B. Lagomarsino, now president of the California Association of Nurserymen as well as of this chapter, also spoke on the convention.

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Quality Stock

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EVERGREENS
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FRUIT TREES
DECIDUOUS SHRUBS
VINES AND BULBS
PORTLAND ROSES

We are now shipping nursery stock, both deciduous and evergreen, and are prepared to take care of your orders promptly. We suggest that orders for mid-winter or early spring be placed at once to avoid disappointments.

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GENERAL NURSERY STOCK

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Maples—Birch—Hawthorn—Chinese Elm—Bechtel's Crab—Flowering Cherry—Weeping Cherry—Weeping European Aspen—Laburnum Vossii—Laburnum Adami.

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97 acres of them, a complete assortment, well cared for, young shrubs, the best to be had.

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Landing Growers Since 1900

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WHOLESALE GROWERS

Fruit, Shade, Flowering Ornamental Trees, Fruit-tree Seedlings, Roses, Etc.
Very complete line of quality stock
Catalogue sent on request.

OBITUARY.

Jacob B. Wagner.

Jacob B. Wagner, founder of the Wagner Nurseries, 1200 North Foot-hill boulevard, Pasadena, Cal., died October 6 at his home. He had been in failing health since a serious illness four years ago, but had spent the past three years traveling extensively with Mrs. Wagner. They celebrated their golden wedding anniversary last July.

The Wagner Nurseries were founded in 1892. In 1932 Mr. Wagner retired and turned the business over to his son, A. Z. Wagner, who survives him, as do his widow and two daughters.

Gustave Tolleson.

Gustave Tolleson, aged 69, founder of Tolleson's Nurseries, Denver, Colo., died October 8 at a local hospital, where he had been a patient for two months.

Mr. Tolleson was born in Sweden and came to the United States fifty years ago. He first settled at Lake City, Minn., moving to Colorado in 1921. A son, Leonard, and a brother, John, were associated with him in the business. They survive him, as do his widow and a daughter.

Allen L. Wood.

Allen L. Wood, 80, former nurseryman and member of the New York State Nurserymen's Association, died at his home, 1922 Culver road, Rochester, N. Y., October 17.

Mr. Wood, a native of Rochester, was owner of the Woodlawn Nurseries for many years, retiring about four years ago.

He was prominent in Masonic circles. Burial was in Mount Hope cemetery. Two sons, Walter E. and Allen R. Wood; a brother, Walter H. Wood, and a granddaughter, Shirley Wood, survive him.

Mrs. Carl Holman.

Mrs. Frances Elizabeth Holman, wife of Carl Holman, owner of the Leavenworth Nurseries, Leavenworth, Kan., died unexpectedly October 14 at Concordia, Kan. She had gone there to be with her father, Lester Hakes, who was ill in a hospital. Mrs. Holman accompanied her husband on the A. A. N. convention trip in July. She was ill afterward, but apparently had recovered. She

is survived by her husband and a daughter, who graduated from Kansas State College and is now employed at Washington, D. C. Mrs. Holman had been a resident of Leavenworth county thirty-four years. The funeral was held at the Christian church, Leavenworth, October 16.

THE Lamb Nursery, Spokane, Wash., is opening a branch at Oak Grove, Ore., which John D. Linton will manage.

CLASSIFIED ADS

Five lines, \$1.00,
each additional line, 20 cents,
per insertion.

Let these little liners move
your stock easily and cheaply.

Peonies: Tree and Herbaceous, best varieties.
Oberlin Peony Gardens, Sinking Spring, Pa.

Early-bearing pecan and fruit trees.
Catalogue free. New crop pecans.
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VIBURNUM RHYTIDOPHYLLUM, 6 to 8 ins.,
transplanted, 20c; 8 to 10 ins., 25c.
WAYNESBORO NURSERIES, Waynesboro, Va.

NURSERY-GROWN DOGWOOD SEEDLINGS.
Grades, 4 to 6, 6 to 12, 12 to 18 and 18 to 24 ins.
Prices are very reasonable.
NAUGHER NURSERY, CHASE, ALA.

CEDAR SHINGLE TOW.
Baled, in carlots, F. O. B. Virginia Mill, \$7.00
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WAYNESBORO NURSERIES, INC.,
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New crop Delphinium seeds, Giant Pacific hybrids, mixed colors, including Black Knight series or Lyondel Hybrids, Dr. Leonian's strain. Limited quantity, 1/4 oz., \$1.25; 1 oz., \$4.00.
S. J. Cook Nursery, R. 1, Dunkirk, N. Y.

2000 Juniper Virginiana. Every tree a specimen, 8 to 9 ft., sheared many times, very dense to tip, about 3 ft. diameter. Perfect B. & B. soil. F.O.B. car or truck \$3.00 each.
BARNES NURSERY, Bartlesville, Okla.

BUXUS SEMPERVIRENS. Per 100
6 to 8 ins., 4 yrs., transpl., heavy.....\$12.00
8 to 10 ins., 5 yrs., transpl., heavy..... 20.00
10 to 12 ins., 6 yrs., transpl., heavy..... 25.00
WAYNESBORO NURSERIES, Waynesboro, Va.

Write for our catalogued Price List. Nursery Stock for Fall Planting. Christmas Trees and Evergreen Decorations for the holidays. Reasonable prices, containers free.
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SITUATION WANTED.
Twenty years' experience in all phases of nursery work. Prefer supervision of planting or propagation. College education. Best of references. Write Box 572, Newton, N. C.

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PACIFIC (Giant) HYBRIDS
Two-year-old—Transplanted—Now Ready
\$10.00 per 100
O. K. GULDEMOND, GALESBURG, MICH.

SPECIAL CLEARANCE SALE.
Peonies, 3 to 5-eye divisions. Per 100 Per 1000
980 Mme. Ducl\$10.00 \$90.00
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Fine stock from 2 and 3-year plants.
LITTLEFORD NURSERIES, Downers Grove, Ill.

Elmagnus; Gardenia florida, Gardenia Fortunei, Gardenia radicans; Waxleaf Ligustrums; Cornus florida; Cydonia japonica, cutting-grown. Persian Lilacs.
Write for complete price list.
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SPECIMEN APPLE TREES.
Grown for shade and ornamental purposes in assorted varieties. 7 to 8 ft., 1 1/4 to 1 1/2-in. caliper, \$7.50 per 10, \$65.00 per 100; 1 1/2 to 2-in. caliper, \$10.00 per 10, \$90.00 per 100. 4 to 5-in. caliper, B&B, trees quoted on request.
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PANSY PLANTS. IMPROVED SWISS GIANTS.
Strong, stocky plants from a choice,
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GRAFTED THOMAS BLACK WALNUT.
Select Black Walnut and White Oak Seedlings.
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Hardy ferns, tall, medium, dwarf and evergreen sorts, \$5.00 per 100.
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BOOKS

reviewed in this issue
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Ask for circular of horticultural books.

NEW RABBIT REPELLENT.

After testing more than 200 materials on mixtures during the past two years, the horticulture department of Michigan State College states that the only repellent that proved to be safe to use on fruit trees, as well as effective against cottontail rabbits, is a formula consisting of rosin and ethyl alcohol.

In these trials the trees treated with the mixture of rosin and linseed oil mentioned in the October 1 issue showed evidence of restricted growth.

The safer mixture recommended to replace it is discussed as follows:

"The dark-colored, cheaper grades of rosin and the cheaper grades of denatured commercial ethyl alcohol were found to be as satisfactory as the higher grades. So-called 'anti-freeze' alcohol may be used if it does not contain methyl alcohol. Methyl alcohol (wood alcohol or methanol) does not dissolve rosin.

"A satisfactory coating may be made by dissolving seven pounds of rosin in a gallon of alcohol. These proportions are slightly more than one part of rosin to one part of alcohol, by weight. A good method of mixing is to pulverize the rosin and add it to the alcohol in a container with a cover tight enough to allow shaking and prevent evaporation. If the container is kept in a warm room, and shaken occasionally, the rosin will dissolve more rapidly. No heat should be applied. To heat the solution not only is dangerous, but may drive off enough alcohol to alter the composition of the mixture. Handled in this fashion, the rosin is usually dissolved in twenty-four hours. It is well to mix at one time only as much as will be used in a few days.

"Water causes a white precipitate to be formed in this solution. If much of this precipitate is present, it will greatly alter the consistency of the repellent, or even seriously interfere with its application. To avoid contamination of the reserve stock, a smaller container should be used in the orchard. The brush will pick up water from snow or damp soil and carry it into the field container. Therefore the repellent solution should not be poured from the field can back into the reserve stock.

"Trees treated with the rosin-al-

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BENJAMIN CHASE
COMPANY**
DERRY, N. H.

cohol repellent always turn white in the next rain or snow. This does not change the effectiveness of the repellent. Indeed, a white surface reflects sun rays and may minimize winter injury.

"The trees should be treated in the fall and only when the bark is dry. One application of this repellent protects all winter. It should be applied to the trees with a cheap paintbrush. Brushes, containers and gloves may be cleaned with alcohol. Cottontail rabbits can reach about two feet; therefore young trees should be painted two feet higher than the snow is expected to drift. Scaffold limbs of low-branching trees should be treated when they are within the zone of possible rabbit damage.

"Field tests show that one gallon of repellent will be sufficient to treat about 150 to 200 2-year-old nursery trees, the exact number depending on the height of treatment and size of tree. One man found that he could coat about thirty-five 4-year-old apple trees in an hour."

CATALOGUES RECEIVED.

[In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in the American Nurseryman.]

Boyd Nursery Co., McMinnville, Tenn.—Wholesale price list of general line of stock, 40 pages and cover, 4x9 inches.

Mobala Nurseries, Mobile, Ala.—Wholesale list of azaleas, camellias, gardenias and broad-leaved evergreens, 28 pages, 4x9 inches.

Evergreen Garden Nursery, McMinnville, Tenn.—Wholesale list of native evergreens and azaleas, 4-page circular, 4x9 inches.

Krieger's Wholesale Nursery, Bridgman, Mich.—Wholesale list of small fruit plants and vegetable roots, 4-page circular, 6x8 inches.

Texas Nursery Co., Sherman, Tex.—Wholesale list of general line of stock, 56 pages and cover, 5x7 $\frac{1}{2}$ inches.

Richmond Nurseries, Richmond, Wash.—Wholesale catalogue chiefly of evergreens, 24 pages and cover, 5 $\frac{1}{2}$ x8 $\frac{1}{2}$ inches.

Blackwell Nurseries, Semmes, Ala.—Wholesale list features azaleas and camellias, 16 pages and cover, 4x9 inches.

Verhalen Nursery Co., Scottsville, Tex.—Mimeographed wholesale list of general stock, 23 pages and cover, 8 $\frac{1}{2}$ x11 inches.

Griffing Nurseries, Beaumont, Tex.—Wholesale list of stock for south, 36 pages and cover, 4x9 inches.

H. E. WAREHAM, Thompsonville, Mich., with Mrs. Wareham, left for Freeport, Tex., recently, where he will do landscape work on the new Dow Chemical Co. housing project.

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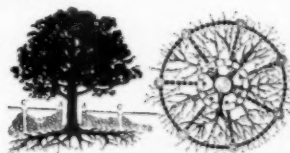
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